



#7

SEQUENCE LISTING

<10> Croteau, Rodney et al.

<120> Transacylases of the Paclitaxel Biosynthetic Pathway

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<151> 1999-12-07

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<170> PatentIn Ver. 2.1

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Leu His Leu Met Thr Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
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 Lys Glu Ser Leu Ser Ser Phe Glu Ile Val Ala Ala Leu Val Trp Leu
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agtggatcta ttttgcgtgc tgcaatgggtt atacagaaat caagggttttt ctttacagag 780
 aattttccggt taagatctat gacacaacca tctgcattga ctgtgaagat caagcacaaa 840
 aatgtagttg catgtagtga ttggaggcaa tatggatatg atgaagtgga cttcggctgg 900
 ggtaaacc 908

<210> 16
 <211> 302
 <212> PRT
 <213> *Taxus cuspidata*

<400> 16
 Phe Tyr Pro Phe Ala Gly Arg Leu Arg Asn Lys Glu Asn Gly Asp Leu
 1 5 10 15
 Glu Val Glu Cys Thr Gly Glu Gly Ala Val Phe Val Glu Ala Met Ala
 20 25 30
 Asp Thr Asp Leu Ser Ser Leu Gly Asp Leu Asp Ala His Asn Pro Ser
 35 40 45
 Phe His Gln Leu Ser Val Ser Pro Pro Val Asp Ser Asp Ile Glu Gly
 50 55 60
 Leu His Leu Ala Ala Leu Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
 65 70 75 80
 Val Leu Gly Val Ser Leu Asn Gln Ser Val Cys Asp Gly Lys Gly Leu
 85 90 95
 Gly Asn Phe Leu Lys Gly Val Ala Glu Met Val Arg Gly Lys Asp Lys
 100 105 110
 Pro Ser Ile Glu Pro Val Trp Asn Arg Glu Met Val Lys Phe Glu Asp
 115 120 125
 Tyr Thr Arg Leu Gln Phe Tyr His His Glu Phe Ile Gln Pro Pro Leu
 130 135 140
 Ile Asp Glu Lys Ile Val Gln Lys Ser Leu Val Ile Asn Leu Glu Thr
 145 150 155 160
 Ile Asn Ile Ile Lys Arg Cys Ile Met Glu Glu Tyr Thr Lys Phe Phe
 165 170 175
 Ser Thr Phe Glu Ile Val Ala Ala Met Val Trp Leu Ala Arg Thr Lys
 180 185 190
 Ala Phe Lys Ile Pro His Ser Glu Asn Ala Glu Leu Leu Phe Thr Met
 195 200 205
 Asp Met Arg Glu Ser Phe Asn Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
 210 215 220
 Asn Val Met Gly Ile Val Cys Ala Leu Asp Asn Val Lys His Leu Leu
 225 230 235 240
 Ser Gly Ser Ile Leu Arg Ala Ala Met Val Ile Gln Lys Ser Arg Phe
 245 250 255
 Phe Phe Thr Glu Asn Phe Arg Leu Arg Ser Met Thr Gln Pro Ser Ala

260 265 270

Leu Thr Val Lys Ile Lys His Lys Asn Val Val Ala Cys Ser Asp Trp
275 280 285

Arg Gln Tyr Gly Tyr Asp Glu Val Asp Phe Gly Trp Gly Lys
290 295 300

<210> 17
<211> 908
<212> DNA
<213> Taxus cuspidata

<400> 17

ttctacccgt	ttgcggggcg	gatgagaaac	aaaggagatg	gggaactgga	agtggattgc	60
acgggggaag	gtgctctgtt	tgtagaagcc	atggcggacg	acaacctttc	agtgttgga	120
ggttttgatt	accacaatcc	agcatttgga	aagctacttt	actcactacc	actggatacc	180
cctattcacg	acctccatcc	tctgggttgt	caggtaactc	gttttacctg	cgggggggtt	240
gttgtgggat	taagtttgga	ccatactata	tgtgatggac	gtgggtgcagg	tcaatttctt	300
aaagccctag	cagaratggc	gaggggagag	gctaagccct	cattggaacc	aatatggaat	360
agagagttgt	tgaagcccga	agaccttata	cgcctgcaat	tttatcactt	tgaatcgatg	420
cgtccacctc	caatagttga	agaaatgggt	caatcatcta	ttattataaa	tgctgagaca	480
ataagtaata	tsaaacaata	cattatggaa	gaatgtaaag	aatcttggtc	tgcatattgat	540
gtcgtaggag	gattggcttg	gctagccagg	acaaaggctt	ttcaaattcc	acatacagag	600
aatgtgatgg	ttatttttgc	agtggatgcg	aggagatcat	ttgatccacc	acttccaaag	660
ggttactatg	gtaatgtcgt	tggtaatgca	tgtgcattgg	ataatgttca	agacctctta	720
aatggatctc	ttttgcgtgc	tacaatgatt	ataaagaaat	caaagggtatc	tttaaaagag	780
aatataaggg	caaaaacttt	gacgatacca	tctatagtag	atgtgaatgt	gaaacatgaa	840
aacatagttg	gattaggcga	tttgagacga	ctgggattta	atgaagtgga	cttcggctgg	900
ggsaagcc						908

<210> 18
<211> 302
<212> PRT
<213> Taxus cuspidata

<220>
<221> VARIANT
<222> 164
<223> Any amino acid

<400> 18

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Glu	Val	Asp	Cys	Thr	Gly	Glu	Gly	Ala	Leu	Phe	Val	Glu	Ala	Met	Ala
			20					25					30		
Asp	Asp	Asn	Leu	Ser	Val	Leu	Gly	Gly	Phe	Asp	Tyr	His	Asn	Pro	Ala
		35					40					45			
Phe	Gly	Lys	Leu	Leu	Tyr	Ser	Leu	Pro	Leu	Asp	Thr	Pro	Ile	His	Asp
	50					55				60					
Leu	His	Pro	Leu	Val	Val	Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly	Gly	Phe
65					70				75						80
Val	Val	Gly	Leu	Ser	Leu	Asp	His	Thr	Ile	Cys	Asp	Gly	Arg	Gly	Ala
			85						90					95	

Gly Gln Phe Leu Lys Ala Leu Ala Glu Met Ala Arg Gly Glu Ala Lys
 100 105 110
 Pro Ser Leu Glu Pro Ile Met Asn Arg Glu Leu Leu Lys Pro Glu Asp
 115 120 125
 Leu Ile Arg Leu Gln Phe Tyr His Phe Glu Ser Met Arg Pro Pro Pro
 130 135 140
 Ile Val Glu Glu Met Val Gln Ser Ser Ile Ile Ile Asn Ala Glu Thr
 145 150 155 160
 Ile Ser Asn Xaa Lys Gln Tyr Ile Met Glu Glu Cys Lys Glu Ser Cys
 165 170 175
 Ser Ala Phe Asp Val Val Gly Gly Leu Ala Met Leu Ala Arg Thr Lys
 180 185 190
 Ala Phe Gln Ile Pro His Thr Glu Asn Val Met Val Ile Phe Ala Val
 195 200 205
 Asp Ala Arg Arg Ser Phe Asp Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
 210 215 220
 Asn Val Val Gly Asn Ala Cys Ala Leu Asp Asn Val Gln Asp Leu Leu
 225 230 235 240
 Asn Gly Ser Leu Leu Arg Ala Thr Met Ile Ile Lys Lys Ser Lys Val
 245 250 255
 Ser Leu Lys Glu Asn Ile Arg Ala Lys Thr Leu Thr Ile Pro Ser Ile
 260 265 270
 Val Asp Val Asn Val Lys His Glu Asn Ile Val Gly Leu Gly Asp Leu
 275 280 285
 Arg Arg Leu Gly Phe Asn Glu Val Asp Phe Gly Trp Gly Lys
 290 295 300

<210> 19
 <211> 911
 <212> DNA
 <213> Taxus cuspidata

<400> 19
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 acaggggatg gtgctctgtt tgtggaagcc atggtggaag acaccatttc agtccttacga 120
 gatctggatg acctcaatcc atcatttcag cagttagttt tttggcatcc attggacact 180
 gctattgagg atcttcatct tgtgattgtt caggtaacac gttttacatg tgggggcatt 240
 gccgttggag tgactttgcc ccatagtgtg tgtgatggac gtggagcacc ccagtttgtt 300
 acagcactgg cagaaatggc gaggggagag gttaagccct tattagaacc aatatggaat 360
 agagaattgt tgaaccctga agaccctcta catctccagt taaatcaatt tgattcgata 420
 tgcccacctc caatgctcga ggaattgggt caagcttctt ttgttataaa tgttgacacc 480
 atagaatata tgaaacaatg tgttatggag gaatgtaatg atttttgttc gtcctttgaa 540
 gtagtggcag cattgggttg gatagcaagg acaaaggctc ttcaaattcc acatactgag 600
 aatgtgaagc ttctctttgc gatggatttg aggaaattat ttaatccccc acttccaaat 660
 ggatattatg gtaatgccat tgggtactgca tatgcaatgg ataatgtcca agacctctta 720
 aatggatctc ttttgcggtgc tataatgatt ataaaaaag caaaggctga tttaaaagat 780
 aattattcga ggtcaagggt agttacaaac ccaattcat tagatgtgaa caagaaatcc 840

aacaacattc ttgcattgag tgactggagg cggttgggat tttatgaagc cgattttggc 900
 tggggcaagc c 911

<210> 20
 <211> 303
 <212> PRT
 <213> Taxus cuspidata

<400> 20

Tyr	Tyr	Pro	Leu	Ala	Gly	Arg	Leu	Arg	Ser	Lys	Glu	Ile	Gly	Glu	Leu
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Glu	Val	Glu	Cys	Thr	Gly	Asp	Gly	Ala	Leu	Phe	Val	Glu	Ala	Met	Val
			20					25					30		
Glu	Asp	Thr	Ile	Ser	Val	Leu	Arg	Asp	Leu	Asp	Asp	Leu	Asn	Pro	Ser
		35					40					45			
Phe	Gln	Gln	Leu	Val	Phe	Trp	His	Pro	Leu	Asp	Thr	Ala	Ile	Glu	Asp
	50					55					60				
Leu	His	Leu	Val	Ile	Val	Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly	Gly	Ile
65					70					75					80
Ala	Val	Gly	Val	Thr	Leu	Pro	His	Ser	Val	Cys	Asp	Gly	Arg	Gly	Ala
				85					90					95	
Pro	Gln	Phe	Val	Thr	Ala	Leu	Ala	Glu	Met	Ala	Arg	Gly	Glu	Val	Lys
			100					105					110		
Pro	Leu	Leu	Glu	Pro	Ile	Trp	Asn	Arg	Glu	Leu	Leu	Asn	Pro	Glu	Asp
		115					120					125			
Pro	Leu	His	Leu	Gln	Leu	Asn	Gln	Phe	Asp	Ser	Ile	Cys	Pro	Pro	Pro
		130				135					140				
Met	Leu	Glu	Glu	Leu	Gly	Gln	Ala	Ser	Phe	Val	Ile	Asn	Val	Asp	Thr
145					150					155					160
Ile	Glu	Tyr	Met	Lys	Gln	Cys	Val	Met	Glu	Glu	Cys	Asn	Asp	Phe	Cys
				165					170					175	
Ser	Ser	Phe	Glu	Val	Val	Ala	Ala	Leu	Val	Trp	Ile	Ala	Arg	Thr	Lys
			180					185					190		
Ala	Leu	Gln	Ile	Pro	His	Thr	Glu	Asn	Val	Lys	Leu	Leu	Phe	Ala	Met
			195				200					205			
Asp	Leu	Arg	Lys	Leu	Phe	Asn	Pro	Pro	Leu	Pro	Asn	Gly	Tyr	Tyr	Gly
			210			215					220				
Asn	Ala	Ile	Gly	Thr	Ala	Tyr	Ala	Met	Asp	Asn	Val	Gln	Asp	Leu	Leu
225					230					235					240
Asn	Gly	Ser	Leu	Leu	Arg	Ala	Ile	Met	Ile	Ile	Lys	Lys	Ala	Lys	Ala
				245				250						255	
Asp	Leu	Lys	Asp	Asn	Tyr	Ser	Arg	Ser	Arg	Val	Val	Thr	Asn	Pro	Asn
			260					265					270		

Ser Leu Asp Val Asn Lys Lys Ser Asn Asn Ile Leu Ala Leu Ser Asp
 275 280 285

Trp Arg Arg Leu Gly Phe Tyr Glu Ala Asp Phe Gly Trp Gly Lys
 290 295 300

<210> 21
 <211> 911
 <212> DNA
 <213> Taxus cuspidata

<400> 21
 tactacccgc tggcaggacg gctcagaagt aaagaaattg gggaacttga agtggagtgc 60
 acaggggatg gtgctctgtt tgtggaagcc atgggtggaag acaccatttc agtcttacga 120
 gatctggatg acctcaatcc atcatttcag cagttagttt tttggcatcc attggacact 180
 gctattgagg atcttcatct tgtgattgtt caggtaacac gttttacatg tgggggcatt 240
 gccgttggag tgactttgcc ccatagtgtg tgtgatggac gtggagcacc ccagtttggt 300
 acagcactgg cagaaatggc gaggggagag gttaagccct tattagaacc aatatggaat 360
 agagaattgt tgaaccctga agaccctcta catctccagt taaatcaatt tgattcgata 420
 tgcccacctc caatgctcga ggaattgggt caagcttctt ttgttataaa tgttgacacc 480
 atagaatata tgaacaatg tgttatggag gaatgtaatg atttttgttc gtcctttgaa 540
 gtagtggcag cattggtttg gatagcaagg acaaaggctc ttcaaattcc acatactgag 600
 aatgtgaagc ttctctttgc gatggatttg aggaaattat ttaatccccc acttccaaat 660
 ggatattatg gtaatgccat tgggtactgca tatgcaatgg ataatgtcca agacctctta 720
 aatggatctc ttttgcggtc tataatgatt ataaaaaag caaaggctga tttaaaagat 780
 aattattcga ggtcaagggt agttacaaac ccaaattcat tagatgtgaa caagaaatcc 840
 aacaacattc ttgcattgag tgactggagg cggttgggat tttatgaagc cgattttggc 900
 tggggcaagc c 911

<210> 22
 <211> 306
 <212> PRT
 <213> Taxus cuspidata

<400> 22
 Tyr Tyr Pro Leu Ala Gly Arg Leu Glu Thr Cys Asp Gly Met Val Tyr
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 Ile Asp Cys Asn Asp Lys Gly Ala Glu Phe Ile Glu Ala Tyr Ala Ser
 20 25 30
 Pro Glu Leu Gly Val Ala Glu Ile Met Ala Asp Ser Phe Pro His Gln
 35 40 45
 Ile Phe Ala Phe Asn Gly Val Leu Asn Ile Asp Gly His Phe Met Pro
 50 55 60
 Leu Leu Ala Val Gln Ala Thr Lys Leu Lys Asp Gly Ile Ala Leu Ala
 65 70 75 80
 Ile Thr Val Asn His Ala Val Ala Asp Ala Thr Ser Val Trp His Phe
 85 90 95
 Ile Ser Ser Trp Ala Gln Leu Cys Lys Glu Pro Ser Asn Ile Pro Leu
 100 105 110
 Leu Pro Leu His Thr Arg Cys Phe Thr Thr Ile Ser Pro Ile Lys Leu
 115 120 125

Asp Ile Gln Tyr Ser Ser Thr Thr Thr Glu Ser Ile Asp Asn Phe Phe
 130 135 140
 Pro Pro Pro Leu Thr Glu Lys Ile Phe His Phe Ser Gly Lys Thr Ile
 145 150 155 160
 Ser Arg Leu Lys Glu Glu Ala Met Glu Ala Cys Lys Asp Lys Ser Ile
 165 170 175
 Ser Ile Ser Ser Phe Gln Ala Leu Cys Gly His Leu Trp Gln Ser Ile
 180 185 190
 Thr Arg Ala Arg Gly Leu Ser Pro Ser Glu Pro Thr Thr Ile Lys Ile
 195 200 205
 Ala Val Asn Cys Arg Pro Arg Ile Val Pro Pro Leu Pro Asn Ser Tyr
 210 215 220
 Phe Gly Asn Ala Val Gln Val Val Asp Val Thr Met Thr Thr Glu Glu
 225 230 235 240
 Leu Leu Gly Asn Gly Gly Ala Cys Ala Ala Leu Ile Leu His Gln Lys
 245 250 255
 Ile Ser Ala His Gln Asp Thr Gln Ile Arg Ala Glu Leu Asp Lys Pro
 260 265 270
 Pro Lys Ile Val His Thr Asn Asn Leu Ile Pro Cys Asn Ile Ile Ala
 275 280 285
 Met Ala Gly Ser Pro Arg Phe Pro Ile Tyr Asn Asn Asp Phe Gly Trp
 290 295 300
 Gly Lys
 305

<210> 23
 <211> 908
 <212> DNA
 <213> *Taxus cuspidata*

<400> 23
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 acaggggagg gtgcactggt tgtggaagcc gtggtggaca atgatctttc agtcttgaaa 120
 gatttgatg cccaaaatgc atcttatgag cagttgctct ttcgccttc gcccaataca 180
 caggttcagg acctccatcc tctgattctt caggtaactc gttttaaatg tggagggttt 240
 gttgtgggag ttggtttcca ccatagtata tgtgacgcac gaggaggaac tcaatttctt 300
 ctaggcctag cagatatggc aaggggagag actaagcctt tagtggaacc agtatggaat 360
 agagaactga taaaccctga agatctaatt cacctccaat ttcataagtt tgggttgata 420
 cgccaacctc taaaacttga tgaaatttgt caagcatctt ttactataaa ctcaaagata 480
 ataaattaca tcaaacaatg tggtatagaa gaatgtaatg aaattttctc tgcatttgaa 540
 gttgtagtag cattaacttg gatagcaagg acaaaggctt ttcaaattcc acatagtgag 600
 aatgtgatga tgctctttgg aatggacgcg aggaaatatt ttaatccccc acttccaaag 660
 ggatattatg gtaatgccat tggtacttca tgtgtaattg aaaatgtaca agacctctta 720
 aatggatctc tttcgcgtgc tgtaatgatc acaaagaaat caaagggtccc tttaattgag 780
 aatttaaggt caagaattgt ggcgaaccaa tctggagtag atgaggaaat taagcatgaa 840
 aacgtagttg gatttggaga ttggaggcga ttgggatttc atgaagtgga cttcggctgg 900
 ggcaagcc 908

<210> 24
 <211> 302
 <212> PRT
 <213> Taxus cuspidata

<400> 24

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Glu	Val	Glu	Cys	Thr	Gly	Glu	Gly	Ala	Leu	Phe	Val	Glu	Ala	Val	Val
			20					25					30		
Asp	Asn	Asp	Leu	Ser	Val	Leu	Lys	Asp	Leu	Asp	Ala	Gln	Asn	Ala	Ser
		35					40					45			
Tyr	Glu	Gln	Leu	Leu	Phe	Ser	Leu	Pro	Pro	Asn	Thr	Gln	Val	Gln	Asp
	50					55					60				
Leu	His	Pro	Leu	Ile	Leu	Gln	Val	Thr	Arg	Phe	Lys	Cys	Gly	Gly	Phe
65					70					75					80
Val	Val	Gly	Val	Gly	Phe	His	His	Ser	Ile	Cys	Asp	Ala	Arg	Gly	Gly
				85					90					95	
Thr	Gln	Phe	Leu	Leu	Gly	Leu	Ala	Asp	Met	Ala	Arg	Gly	Glu	Thr	Lys
			100					105					110		
Pro	Leu	Val	Glu	Pro	Val	Trp	Asn	Arg	Glu	Leu	Ile	Asn	Pro	Glu	Asp
		115					120					125			
Leu	Met	His	Leu	Gln	Phe	His	Lys	Phe	Gly	Leu	Ile	Arg	Gln	Pro	Leu
130						135					140				
Lys	Leu	Asp	Glu	Ile	Cys	Gln	Ala	Ser	Phe	Thr	Ile	Asn	Ser	Lys	Ile
145					150					155					160
Ile	Asn	Tyr	Ile	Lys	Gln	Cys	Val	Ile	Glu	Glu	Cys	Asn	Glu	Ile	Phe
				165					170					175	
Ser	Ala	Phe	Glu	Val	Val	Val	Ala	Leu	Thr	Trp	Ile	Ala	Arg	Thr	Lys
			180					185					190		
Ala	Phe	Gln	Ile	Pro	His	Ser	Glu	Asn	Val	Met	Met	Leu	Phe	Gly	Met
		195					200					205			
Asp	Ala	Arg	Lys	Tyr	Phe	Asn	Pro	Pro	Leu	Pro	Lys	Gly	Tyr	Tyr	Gly
	210					215					220				
Asn	Ala	Ile	Gly	Thr	Ser	Cys	Val	Ile	Glu	Asn	Val	Gln	Asp	Leu	Leu
225					230					235					240
Asn	Gly	Ser	Leu	Ser	Arg	Ala	Val	Met	Ile	Thr	Lys	Lys	Ser	Lys	Val
				245					250					255	
Pro	Leu	Ile	Glu	Asn	Leu	Arg	Ser	Arg	Ile	Val	Ala	Asn	Gln	Ser	Gly
			260					265					270		
Val	Asp	Glu	Glu	Ile	Lys	His	Glu	Asn	Val	Val	Gly	Phe	Gly	Asp	Trp
		275					280					285			
Arg	Arg	Leu	Gly	Phe	His	Glu	Val	Asp	Phe	Gly	Trp	Gly	Lys		

290

295

300

<210> 25
 <211> 1320
 <212> DNA
 <213> Taxus cuspidata

<400> 25
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 cccaaaaata tcttgacact ctccccatt gacaacaaaa ctagaggact aaccaacata 120
 ttatcagtct acaatgcctc ccagagaggt tctgtttctg cagatcctgc aaaaacaatt 180
 cgagaggctc tctccaaggt gctgggttat tatccccctt ttgctggaag gctgagaaac 240
 acagaaaatg gggatcttga agtggagtg c acaggggagg gtgccgtctt tgtggaagcc 300
 atggcgagaca acgaccttct agtattacaa gattttcaatg agtacgatcc atcatttcag 360
 cagctagtctt ttaatcttct agaggatgtc aatattgagg acctccatct tctaactgtt 420
 caggtaactc gttttacatg tggaggattt gttgtgggca caagattcca ccatagtgtg 480
 tctgatggaa aaggaatcgg ccagttactt aaaggcatgg gagagatggc aaggggggag 540
 tttaagccct ogttagaacc aatatggaat agagaaatgg tgaagcctga agacattatg 600
 tacctccagt ttgatcactt tgatttcata caccacacct ttaatcttga gaagtctatt 660
 caagcatcta tggtaataag ctttgagaga ataaattata tcaaacgatg catgatggaa 720
 gaatgcaaag aatttttttc tgcatttgaa gttgtagtag cattgatttg gctggcaagg 780
 acaaagtctt ttcgaattcc acccaatgag tatgtgaaaa ttatctttcc aatcgacatg 840
 aggaattcat ttgactcccc tcttccaaag ggatactatg gtaatgctat tggtaatgca 900
 tgtgcaatgg ataagtgtcaa agacctctta aatggatctc ttttatatgc tctaattgctt 960
 ataaagaaat caaagtgtgc tttaaagtga aatttcaaat caagaatctt gacaaaacca 1020
 tctacattag atgcgaatat gaagcatgaa aatgtagtcg gatgtggcga ttggagggaat 1080
 ttgggatttt atgaagcaga ttttgatgg ggaaatgcag tgaatgtaag ccccatgcag 1140
 caacaaagag agcatgaatt agctatgcaa aattattttc tttttctccg atcagctaag 1200
 aacatgattg atggaatcaa gatactaatt ttcatgcctg catcaatggg gaaaccattc 1260
 aaaattgaaa tggaagtcac aataaacaaa tatgtggcta aaatatgtaa ctctaagtta 1320

<210> 26
 <211> 440
 <212> PRT
 <213> Taxus cuspidata

<400> 26
 Met Gly Arg Phe Asn Val Asp Met Ile Glu Arg Val Ile Val Ala Pro
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 Cys Leu Gln Ser Pro Lys Asn Ile Leu His Leu Ser Pro Ile Asp Asn
 20 25 30
 Lys Thr Arg Gly Leu Thr Asn Ile Leu Ser Val Tyr Asn Ala Ser Gln
 35 40 45
 Arg Val Ser Val Ser Ala Asp Pro Ala Lys Thr Ile Arg Glu Ala Leu
 50 55 60
 Ser Lys Val Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg Leu Arg Asn
 65 70 75 80
 Thr Glu Asn Gly Asp Leu Glu Val Glu Cys Thr Gly Glu Gly Ala Val
 85 90 95
 Phe Val Glu Ala Met Ala Asp Asn Asp Leu Ser Val Leu Gln Asp Phe
 100 105 110
 Asn Glu Tyr Asp Pro Ser Phe Gln Gln Leu Val Phe Asn Leu Arg Glu

115					120					125					
Asp	Val	Asn	Ile	Glu	Asp	Leu	His	Leu	Leu	Thr	Val	Gln	Val	Thr	Arg
130					135					140					
Phe	Thr	Cys	Gly	Gly	Phe	Val	Val	Gly	Thr	Arg	Phe	His	His	Ser	Val
145					150					155					160
Ser	Asp	Gly	Lys	Gly	Ile	Gly	Gln	Leu	Leu	Lys	Gly	Met	Gly	Glu	Met
				165					170					175	
Ala	Arg	Gly	Glu	Phe	Lys	Pro	Ser	Leu	Glu	Pro	Ile	Trp	Asn	Arg	Glu
			180					185					190		
Met	Val	Lys	Pro	Glu	Asp	Ile	Met	Tyr	Leu	Gln	Phe	Asp	His	Phe	Asp
		195					200					205			
Phe	Ile	His	Pro	Pro	Leu	Asn	Leu	Glu	Lys	Ser	Ile	Gln	Ala	Ser	Met
	210					215						220			
Val	Ile	Ser	Phe	Glu	Arg	Ile	Asn	Tyr	Ile	Lys	Arg	Cys	Met	Met	Glu
225					230					235					240
Glu	Cys	Lys	Glu	Phe	Phe	Ser	Ala	Phe	Glu	Val	Val	Val	Ala	Leu	Ile
			245						250					255	
Trp	Leu	Ala	Arg	Thr	Lys	Ser	Phe	Arg	Ile	Pro	Pro	Asn	Glu	Tyr	Val
			260					265					270		
Lys	Ile	Ile	Phe	Pro	Ile	Asp	Met	Arg	Asn	Ser	Phe	Asp	Ser	Pro	Leu
		275					280					285			
Pro	Lys	Gly	Tyr	Tyr	Gly	Asn	Ala	Ile	Gly	Asn	Ala	Cys	Ala	Met	Asp
	290					295					300				
Asn	Val	Lys	Asp	Leu	Leu	Asn	Gly	Ser	Leu	Leu	Tyr	Ala	Leu	Met	Leu
305				310					315					320	
Ile	Lys	Lys	Ser	Lys	Phe	Ala	Leu	Asn	Glu	Asn	Phe	Lys	Ser	Arg	Ile
			325						330					335	
Leu	Thr	Lys	Pro	Ser	Thr	Leu	Asp	Ala	Asn	Met	Lys	His	Glu	Asn	Val
			340					345					350		
Val	Gly	Cys	Gly	Asp	Trp	Arg	Asn	Leu	Gly	Phe	Tyr	Glu	Ala	Asp	Phe
		355					360					365			
Gly	Trp	Gly	Asn	Ala	Val	Asn	Val	Ser	Pro	Met	Gln	Gln	Gln	Arg	Glu
	370					375					380				
His	Glu	Leu	Ala	Met	Gln	Asn	Tyr	Phe	Leu	Phe	Leu	Arg	Ser	Ala	Lys
385				390					395					400	
Asn	Met	Ile	Asp	Gly	Ile	Lys	Ile	Leu	Met	Phe	Met	Pro	Ala	Ser	Met
			405					410					415		
Val	Lys	Pro	Phe	Lys	Ile	Glu	Met	Glu	Val	Thr	Ile	Asn	Lys	Tyr	Val
			420				425						430		
Ala	Lys	Ile	Cys	Asn	Ser	Lys	Leu								
	435						440								

<210> 27
 <211> 1317
 <212> DNA
 <213> Taxus cuspidata

<400> 27
 atggagaaga cagatattaca cgtaaactctg attgagaaaag tgatgggttgg gccatccccg 60
 cctctgcccc aaaccaccct gcaactctcc tccatagaca acctgccagg ggtaagagga 120
 agcattttca atgccttggt aattttacaat gcctctccct ctcccaccat gatctctgca 180
 gatcctgcaa aaccaattag agaagctctc gccaaagatcc tgggtttatta tccccctttt 240
 gctggggcgcc tcagagagac agaaaatggg gatctggaag tggaatgcac aggggaggggt 300
 gctatgtttt tggaagccat ggcagacaat gagctgtctg tgttgggaga ttttgatgac 360
 agcaatccat catttcagca gctacttttt tcgcttccac tcgataccaa tttcaaagac 420
 ctctctcttc tgggttggtca ggtaactcgt tttacatgtg gaggccttgt tgttggagtg 480
 agtttccacc atggtgtatg tgatgggtcga ggagcggccc aatttcttaa aggtttggca 540
 gagatggcac ggggagaggt taagctctca ttggaaccaa tatggaatag ggaactagtg 600
 aagcttgatg accctaaata ctttcaattt tttcactttg aattcctacg agcgccttca 660
 attgttgaga aaattggttca aacataattt attatagatt ttgagaccat aaattatata 720
 aaacaatctg ttatggaaga atgtaaagaa ttttgctctt cattcgaagt tgcatacagca 780
 atgacttgga tagcaaggac aagagctttt caaattccag aaagtgaagta cgtgaaaatt 840
 ctcttcggaa tggacatgag gaactcattt aatccccctc ttccaagcgg atactatggt 900
 aactccattg gtaccgcatg tgcagtggat aatgttcaag acctcttaag tggatctctt 960
 ttgcgtgcta taatgattat aaagaaatca aaggtctctt taaatgataa tttcaagtca 1020
 agagctgtgg tgaagccatc tgaattggat gtgaatatga atcatgaaaa cgtagtgtgca 1080
 tttgctgatt ggagccgatt gggatttgat gaagtggatt ttgggttggg gaatgcggtg 1140
 agtgtaagcc ctgtgcaaca acagtctgcg ttagcaatgc aaaattattt tcttttccta 1200
 aaaccttcca agaacaagcc cgatggaatc aaaatattaa tgtttctgcc cctatcaaaa 1260
 atgaagtcac tcaaaattga aatggaagcc atgatgaaaa aatatgtggc taaagta 1317

<210> 28
 <211> 439
 <212> PRT
 <213> Taxus cuspidata

<400> 28
 Met Glu Lys Thr Asp Leu His Val Asn Leu Ile Glu Lys Val Met Val
 1 5 10 15
 Gly Pro Ser Pro Pro Leu Pro Lys Thr Thr Leu Gln Leu Ser Ser Ile
 20 25 30
 Asp Asn Leu Pro Gly Val Arg Gly Ser Ile Phe Asn Ala Leu Leu Ile
 35 40 45
 Tyr Asn Ala Ser Pro Ser Pro Thr Met Ile Ser Ala Asp Pro Ala Lys
 50 55 60
 Pro Ile Arg Glu Ala Leu Ala Lys Ile Leu Val Tyr Tyr Pro Pro Phe
 65 70 75 80
 Ala Gly Arg Leu Arg Glu Thr Glu Asn Gly Asp Leu Glu Val Glu Cys
 85 90 95
 Thr Gly Glu Gly Ala Met Phe Leu Glu Ala Met Ala Asp Asn Glu Leu
 100 105 110
 Ser Val Leu Gly Asp Phe Asp Asp Ser Asn Pro Ser Phe Gln Gln Leu
 115 120 125

Leu Phe Ser Leu Pro Leu Asp Thr Asn Phe Lys Asp Leu Ser Leu Leu
 130 135 140
 Val Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe Val Val Gly Val
 145 150 155 160
 Ser Phe His His Gly Val Cys Asp Gly Arg Gly Ala Ala Gln Phe Leu
 165 170 175
 Lys Gly Leu Ala Glu Met Ala Arg Gly Glu Val Lys Leu Ser Leu Glu
 180 185 190
 Pro Ile Trp Asn Arg Glu Leu Val Lys Leu Asp Asp Pro Lys Tyr Leu
 195 200 205
 Gln Phe Phe His Phe Glu Phe Leu Arg Ala Pro Ser Ile Val Glu Lys
 210 215 220
 Ile Val Gln Thr Tyr Phe Ile Ile Asp Phe Glu Thr Ile Asn Tyr Ile
 225 230 235 240
 Lys Gln Ser Val Met Glu Glu Cys Lys Glu Phe Cys Ser Ser Phe Glu
 245 250 255
 Val Ala Ser Ala Met Thr Trp Ile Ala Arg Thr Arg Ala Phe Gln Ile
 260 265 270
 Pro Glu Ser Glu Tyr Val Lys Ile Leu Phe Gly Met Asp Met Arg Asn
 275 280 285
 Ser Phe Asn Pro Pro Leu Pro Ser Gly Tyr Tyr Gly Asn Ser Ile Gly
 290 295 300
 Thr Ala Cys Ala Val Asp Asn Val Gln Asp Leu Leu Ser Gly Ser Leu
 305 310 315 320
 Leu Arg Ala Ile Met Ile Ile Lys Lys Ser Lys Val Ser Leu Asn Asp
 325 330 335
 Asn Phe Lys Ser Arg Ala Val Val Lys Pro Ser Glu Leu Asp Val Asn
 340 345 350
 Met Asn His Glu Asn Val Val Ala Phe Ala Asp Trp Ser Arg Leu Gly
 355 360 365
 Phe Asp Glu Val Asp Phe Gly Trp Gly Asn Ala Val Ser Val Ser Pro
 370 375 380
 Val Gln Gln Gln Ser Ala Leu Ala Met Gln Asn Tyr Phe Leu Phe Leu
 385 390 395 400
 Lys Pro Ser Lys Asn Lys Pro Asp Gly Ile Lys Ile Leu Met Phe Leu
 405 410 415
 Pro Leu Ser Lys Met Lys Ser Phe Lys Ile Glu Met Glu Ala Met Met
 420 425 430
 Lys Lys Tyr Val Ala Lys Val
 435

<210> 29
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:proteolytic
fragment

<400> 29
Thr Thr Leu Gln Leu Ser Ser Ile Asp Asn Leu Pro Gly Val Arg
1 5 10 15

<210> 30
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:proteolytic
fragment

<400> 30
Ile Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg
1 5 10

<210> 31
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:proteolytic
fragment

<400> 31
Phe Thr Cys Gly Gly Phe Val Val Gly Val Ser Phe
1 5 10

<210> 32
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:proteolytic
fragment

<400> 32
Lys Gly Leu Ala Glu Ile Ala Arg Gly Glu Val Lys
1 5 10

<210> 33
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:proteolytic
fragment

<400> 33

Asn Leu Pro Asn Asp Thr Asn Pro Ser Ser Gly Tyr Tyr Gly Asn
1 5 10 15

<210> 34

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

<220>

<221> misc feature

<222> (3)..(18)

<223> n represents a, c, t, or g.

<400> 34

atnctngtnt attatccncc

20

<210> 35

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

<220>

<221> misc feature

<222> (9)..(18)

<223> n represents a, c, t, or g.

<400> 35

tattatccnc cntttgcngg

20

<210> 36

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

<220>

<221> misc feature

<222> (9)..(18)

<223> n represents a, c, t, or g.

<400> 36

ttctatccnt tcgcnggnag

20

<210> 37
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<220>
<221> misc feature
<222> (9)..(18)
<223> n represents a, c, t, or g.

<400> 37
tactatcct tngcnggnag

20

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<220>
<221> misc feature
<222> (9)..(15)
<223> n represents a, c, t, or g.

<400> 38
ctaaaacna cccnttttg

20

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:consensus
sequence

<400> 39
Phe Tyr Pro Phe Ala Gly Arg
1 5

<210> 40
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:consensus
sequence

<400> 40
Tyr Tyr Pro Leu Ala Gly Arg
1 5

<210> 41
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:consensus
 sequence

<400> 41
 Asp Phe Gly Trp Gly Lys Pro
 1 5

<210> 42
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:PCR primer

<400> 42
 cctcatcttt cccccattga taat 24

<210> 43
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:PCR primer

<400> 43
 aaaaagaaaa taattttgcc atgcaag 27

<210> 44
 <211> 1320
 <212> DNA
 <213> Taxus cuspidata

<400> 44
 atggcaggct caacagaatt tgtggtaaga agcttagaga gagtgatggt ggctccaagc 60
 cagccatcgc ccaaagcttt cctgcagctc tccacccttg acaatctacc aggggtgaga 120
 gaaaacattt ttaacacctt gttagtctac aatgcctcag acagagtttc cgtagatcct 180
 gcaaaagtaa ttcggcaggc tctctccaag gtgttggtgt actattcccc ttttgcaggg 240
 cgtctcagga aaaaagaaaa tggagatctt gaagtggagt gcacagggga gggtgctctg 300
 tttgtggaag ccatggctga cactgacctc tcagtcttag gagatttgga tgactacagt 360
 ccttcacttg agcaactact tttttgtctt ccgcctgata cagatattga ggacatccat 420
 cctctggttg ttcaggtaac tcgttttaca tgtggagggt ttgttgtagg ggtgagtttc 480
 tgccatggta tatgtgatgg actaggagca ggccagtttc ttatagccat gggagagatg 540
 gcaaggggag agattaagcc ctccctcggag ccaatatgga agagagaatt gctgaagccg 600
 gaagaccctt tataccggtt ccagtattat cactttcaat tgatttgccc gccttcaaca 660
 ttcgggaaaa tagttcaagg atctcttggt ataacctctg agacaataaa ttgtatcaaa 720
 caatgcctta gggaagaaag taaagaattt tgctctgcgt tcgaagtgtg atctgcattg 780
 gcttgatag caaggacaag ggctcttcaa attccacata gtgagaatgt gaagcttatt 840
 tttgcaatgg acatgagaaa attatttaac ccaccacttt cgaagggata ctacggtaat 900
 tttgttggtg ccgtatgtgc aatggataat gtcaaggacc tattaagtgg atctcttttg 960

cgtgttgtaa ggattataaa gaaagcaaag gtctcttttaa atgagcattt cacgtcaaca 1020
 atcgtgacac cccgttctgg atcagatgag agtatcaatt atgaaaacat agttggattt 1080
 ggtgatcgaa ggcgattggg atttgatgaa gtagactttg ggtgggggca tgcagataat 1140
 gtaagtctcg tgcaacatgg attgaaggat gtttcagtcg tgcaaagtta ttttcttttc 1200
 atacgacctc ccaagaataa ccccgatgga atcaagatcc tatcgttcat gcccccgta 1260
 atagtgaat ccttcaaatt tgaaatggaa accatgacaa acaaatatgt aactaagcct 1320

<210> 45
 <211> 440
 <212> PRT
 <213> Taxus cuspidata

<400> 45

Met	Ala	Gly	Ser	Thr	Glu	Phe	Val	Val	Arg	Ser	Leu	Glu	Arg	Val	Met
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Val	Ala	Pro	Ser	Gln	Pro	Ser	Pro	Lys	Ala	Phe	Leu	Gln	Leu	Ser	Thr
			20					25					30		
Leu	Asp	Asn	Leu	Pro	Gly	Val	Arg	Glu	Asn	Ile	Phe	Asn	Thr	Leu	Leu
		35					40					45			
Val	Tyr	Asn	Ala	Ser	Asp	Arg	Val	Ser	Val	Asp	Pro	Ala	Lys	Val	Ile
	50					55					60				
Arg	Gln	Ala	Leu	Ser	Lys	Val	Leu	Val	Tyr	Tyr	Ser	Pro	Phe	Ala	Gly
65					70				75						80
Arg	Leu	Arg	Lys	Lys	Glu	Asn	Gly	Asp	Leu	Glu	Val	Glu	Cys	Thr	Gly
			85					90						95	
Glu	Gly	Ala	Leu	Phe	Val	Glu	Ala	Met	Ala	Asp	Thr	Asp	Leu	Ser	Val
		100						105					110		
Leu	Gly	Asp	Leu	Asp	Asp	Tyr	Ser	Pro	Ser	Leu	Glu	Gln	Leu	Leu	Phe
		115					120					125			
Cys	Leu	Pro	Pro	Asp	Thr	Asp	Ile	Glu	Asp	Ile	His	Pro	Leu	Val	Val
	130					135					140				
Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly	Gly	Phe	Val	Val	Gly	Val	Ser	Phe
145					150					155					160
Cys	His	Gly	Ile	Cys	Asp	Gly	Leu	Gly	Ala	Gly	Gln	Phe	Leu	Ile	Ala
			165					170						175	
Met	Gly	Glu	Met	Ala	Arg	Gly	Glu	Ile	Lys	Pro	Ser	Ser	Glu	Pro	Ile
		180						185					190		
Trp	Lys	Arg	Glu	Leu	Leu	Lys	Pro	Glu	Asp	Pro	Leu	Tyr	Arg	Phe	Gln
	195					200						205			
Tyr	Tyr	His	Phe	Gln	Leu	Ile	Cys	Pro	Pro	Ser	Thr	Phe	Gly	Lys	Ile
	210				215						220				
Val	Gln	Gly	Ser	Leu	Val	Ile	Thr	Ser	Glu	Thr	Ile	Asn	Cys	Ile	Lys
225				230						235					240
Gln	Cys	Leu	Arg	Glu	Glu	Ser	Lys	Glu	Phe	Cys	Ser	Ala	Phe	Glu	Val
			245					250						255	

Val Ser Ala Leu Ala Trp Ile Ala Arg Thr Arg Ala Leu Gln Ile Pro
260 265 270

His Ser Glu Asn Val Lys Leu Ile Phe Ala Met Asp Met Arg Lys Leu
275 280 285

Phe Asn Pro Pro Leu Ser Lys Gly Tyr Tyr Gly Asn Phe Val Gly Thr
290 295 300

Val Cys Ala Met Asp Asn Val Lys Asp Leu Leu Ser Gly Ser Leu Leu
305 310 315 320

Arg Val Val Arg Ile Ile Lys Lys Ala Lys Val Ser Leu Asn Glu His
325 330 335

Phe Thr Ser Thr Ile Val Thr Pro Arg Ser Gly Ser Asp Glu Ser Ile
340 345 350

Asn Tyr Glu Asn Ile Val Gly Phe Gly Asp Arg Arg Arg Leu Gly Phe
355 360 365

Asp Glu Val Asp Phe Gly Trp Gly His Ala Asp Asn Val Ser Leu Val
370 375 380

Gln His Gly Leu Lys Asp Val Ser Val Val Gln Ser Tyr Phe Leu Phe
385 390 395 400

Ile Arg Pro Pro Lys Asn Asn Pro Asp Gly Ile Lys Ile Leu Ser Phe
405 410 415

Met Pro Pro Ser Ile Val Lys Ser Phe Lys Phe Glu Met Glu Thr Met
420 425 430

Thr Asn Lys Tyr Val Thr Lys Pro
435 440

<210> 46
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 46
gggaattcca tatggcaggc tcaacagaat ttgtgg

36

<210> 47
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 47
gtttatacat tgattcggaa ctagatctga tc

32

<210> 48
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 6 amino acid
 motif found in acyl transferases

<220>
 <221> VARIANT
 <222> (2)..(4)
 <223> Any amino acid

<400> 48
 His Xaa Xaa Xaa Asp Gly
 1 5

<210> 49
 <211> 1332
 <212> DNA
 <213> Taxus cuspidata

<400> 49
 atggagaagt ctgggttcagc agatctacat gtaaatatca ttgagcgagt ggtgggtggcg 60
 ccatgccagc cgacgcccac aacaatcctg cagctctcta gcattgacaa aatgggagga 120
 ggatttgcca acgtattgct agtcttcggt gcctcccatg gcgtttctgc agatcctgca 180
 aaaacaattc gagaggctct ctccaagacc ttggtctttt atttcccttt tgctgggcgg 240
 ctcagaaaaga aagaagatgg ggatatcgaa gtggagtgca tagagcaggg agctctgttc 300
 gtggaagcca tggcggacaa cgatctttca gtcgtacgag atctggatga gtacaatcca 360
 ttatttcggc agctacaatc ttcgctttca ctggatacag attacaagga cctccatctt 420
 atgactgttc aggttaactcc gtttacatgt ggggggttttg tcatgggaac gagtgtacac 480
 caaagtatat gcgatggaaa tggattgggg caatttttta aaagcatggc agagatagtg 540
 aggggagaag ttaagccctc aatcgaacca atatggaata gagaattggg gaagcctgaa 600
 gactatatac acctccagtt gtatgtcagt gaattcattc gccacacctt agtagttgag 660
 aaagttgggc aaacatctct tgttataagc ttcgagaaaa taaatcatat caaacgatgc 720
 attatggaag aaagtaaaga atctttctct tcatttgaaa ttgtaacagc aatgggtttg 780
 ctagcaagga caagggtttt tcaaattcca cacaacgagg atgtgactct tctccttgca 840
 atggatgcaa ggagatcatt tgacccccct attccgaagg gatactacgg taatgtcatt 900
 ggtactacat atgcaaaaaga taatgtccac aacctcttaa gtggatctct tttgcatgct 960
 ctaacagtta taaagaaatc aatgtcctca ttttatgaga atatgacctc aagagtcttg 1020
 gtgaacccat ctacattaga tttgagtatg aagtatgaaa atgtagtttc acttagtgat 1080
 tggagccggt tgggacataa tgaagtggac tttgggtggg gaaatgcaat aaatgtaagc 1140
 actctgcaac aacaatggga aaatgaggtg gctataccaa ctttttttac tttccttcaa 1200
 actcccaaga atataccaga tggaatcaag atactaatgt tcatgcccc atcaagagag 1260
 aaaacattcg aaattgaagt ggaagccatg ataagaaaat atttgactaa agtgtcgcat 1320
 tcaaagctat aa 1332

<210> 50
 <211> 443
 <212> PRT
 <213> Taxus cuspidata

<400> 50
 Met Glu Lys Ser Gly Ser Ala Asp Leu His Val Asn Ile Ile Glu Arg
 1 5 10 15

Val Val Val Ala Pro Cys Gln Pro Thr Pro Lys Thr Ile Leu Gln Leu

20										25										30																																		
Ser	Ser	Ile	Asp	Lys	Met	Gly	Gly	Gly	Phe	Ala	Asn	Val	Leu	Leu	Val																																							
		35					40					45																																										
Phe	Gly	Ala	Ser	His	Gly	Val	Ser	Ala	Asp	Pro	Ala	Lys	Thr	Ile	Arg																																							
	50					55					60																																											
Glu	Ala	Leu	Ser	Lys	Thr	Leu	Val	Phe	Tyr	Phe	Pro	Phe	Ala	Gly	Arg																																							
	65				70					75					80																																							
Leu	Arg	Lys	Lys	Glu	Asp	Gly	Asp	Ile	Glu	Val	Glu	Cys	Ile	Glu	Gln																																							
				85				90						95																																								
Gly	Ala	Leu	Phe	Val	Glu	Ala	Met	Ala	Asp	Asn	Asp	Leu	Ser	Val	Val																																							
			100				105					110																																										
Arg	Asp	Leu	Asp	Glu	Tyr	Asn	Pro	Leu	Phe	Arg	Gln	Leu	Gln	Ser	Ser																																							
		115				120					125																																											
Leu	Ser	Leu	Asp	Thr	Asp	Tyr	Lys	Asp	Leu	His	Leu	Met	Thr	Val	Gln																																							
	130					135				140																																												
Val	Thr	Pro	Phe	Thr	Cys	Gly	Gly	Phe	Val	Met	Gly	Thr	Ser	Val	His																																							
	145				150				155					160																																								
Gln	Ser	Ile	Cys	Asp	Gly	Asn	Gly	Leu	Gly	Gln	Phe	Phe	Lys	Ser	Met																																							
				165				170					175																																									
Ala	Glu	Ile	Val	Arg	Gly	Glu	Val	Lys	Pro	Ser	Ile	Glu	Pro	Ile	Trp																																							
			180					185				190																																										
Asn	Arg	Glu	Leu	Val	Lys	Pro	Glu	Asp	Tyr	Ile	His	Leu	Gln	Leu	Tyr																																							
		195				200					205																																											
Val	Ser	Glu	Phe	Ile	Arg	Pro	Pro	Leu	Val	Val	Glu	Lys	Val	Gly	Gln																																							
	210					215				220																																												
Thr	Ser	Leu	Val	Ile	Ser	Phe	Glu	Lys	Ile	Asn	His	Ile	Lys	Arg	Cys																																							
	225				230				235					240																																								
Ile	Met	Glu	Glu	Ser	Lys	Glu	Ser	Phe	Ser	Ser	Phe	Glu	Ile	Val	Thr																																							
				245				250					255																																									
Ala	Met	Val	Trp	Leu	Ala	Arg	Thr	Arg	Ala	Phe	Gln	Ile	Pro	His	Asn																																							
			260					265				270																																										
Glu	Asp	Val	Thr	Leu	Leu	Leu	Ala	Met	Asp	Ala	Arg	Arg	Ser	Phe	Asp																																							
	275					280					285																																											
Pro	Pro	Ile	Pro	Lys	Gly	Tyr	Tyr	Gly	Asn	Val	Ile	Gly	Thr	Thr	Tyr																																							
	290				295					300																																												
Ala	Lys	Asp	Asn	Val	His	Asn	Leu	Leu	Ser	Gly	Ser	Leu	Leu	His	Ala																																							
	305				310				315				320																																									
Leu	Thr	Val	Ile	Lys	Lys	Ser	Met	Ser	Ser	Phe	Tyr	Glu	Asn	Met	Thr																																							
				325				330					335																																									
Ser	Arg	Val	Leu	Val	Asn	Pro	Ser	Thr	Leu	Asp	Leu	Ser	Met	Lys	Tyr																																							
			340					345					350																																									

Glu Asn Val Val Ser Leu Ser Asp Trp Ser Arg Leu Gly His Asn Glu
 355 360 365
 Val Asp Phe Gly Trp Gly Asn Ala Ile Asn Val Ser Thr Leu Gln Gln
 370 375 380
 Gln Trp Glu Asn Glu Val Ala Ile Pro Thr Phe Phe Thr Phe Leu Gln
 385 390 395 400
 Thr Pro Lys Asn Ile Pro Asp Gly Ile Lys Ile Leu Met Phe Met Pro
 405 410 415
 Pro Ser Arg Glu Lys Thr Phe Glu Ile Glu Val Glu Ala Met Ile Arg
 420 425 430
 Lys Tyr Leu Thr Lys Val Ser His Ser Lys Leu
 435 440

<210> 51
 <211> 1338
 <212> DNA
 <213> Taxus cuspidata

<400> 51
 atgaagaaga cagggttcggt tgcagaggtc catgtgaata tgattgagcg agtcatggtg 60
 agaccgtgcc tgccttcgcc caaaacaatc ctccctctct ccgccattga caacatggca 120
 agagcttttt ctaacgtatt gctggtctac gctgccaaca tggacagagt ctctgcagat 180
 cctgcaaaaag tgattcgaga ggctctctcc aagggtgctgg tttattatta cccttttgct 240
 gggcggtcca gaaataaaga aaatggggaa cttgaagtgg agtgcacagg gcaggggtgtt 300
 ctgtttctgg aagccatggc tgacagcgac ctttcagtct taacagatct ggataactac 360
 aatccatcgt ttcagcaggt gattttttct ctaccacagg atacagatat tgaggacctc 420
 catctcttga ttgttcaggt aactcgtttt acatgtgggg gttttgttgt gggagcgaat 480
 gtgtatggta gtgcatgcga tgcaaaaagga tttggccagt ttcttcaaag tatggcagag 540
 atggcgagag gagagggttaa gccctcgatt gaaccgatat ggaatagaga actggtgaag 600
 ctagaacatt gtatgccctt ccggatgagt catcttcaaa ttatacatgc acctgtaatt 660
 gaggagaaat ttgttcaaac atctcttggt ataaactttg agataataaa tcatatcaga 720
 cgacgcatca tggaagaacg caaagaaagt ttatcttcat ttgaaattgt agcagcattg 780
 gtttggctag caaagataaa ggcttttcaa attccacata gtgagaatgt gaagcttctt 840
 tttgcaatgg acttgaggag atcattttaat cccctcttc cacatggata ctatggcaat 900
 gccttttggt ttgcatgtgc aatggataat gtccatgacc ttctaagtgg atctcttttg 960
 cgactataa tgatcataaa gaaatcaaag ttctctttac acaaagaact caactcaaaa 1020
 accgtgatga gctcatctgt agtagatgtc aatacgaagt ttgaagatgt agtttcaatt 1080
 agtgattgga ggcattctat atattatgaa gtggactttg ggtggggaga tgcaatgaac 1140
 gtgagcacta tgctacaaca acaggagcac gagaaatctc tgccaactta tttttctttc 1200
 ctacaatcta ctaagaacat gccagatgga atcaagatgc taatgtttat gcctccatca 1260
 aaactgaaaa aattcaaaaat tgaaatagaa gctatgataa aaaaatatgt gactaaagtg 1320
 tgtccgtcaa agttatga 1338

<210> 52
 <211> 445
 <212> PRT
 <213> Taxus cuspidata

<400> 52
 Met Lys Lys Thr Gly Ser Phe Ala Glu Phe His Val Asn Met Ile Glu
 1 5 10 15
 Arg Val Met Val Arg Pro Cys Leu Pro Ser Pro Lys Thr Ile Leu Pro

20					25					30					
Leu	Ser	Ala	Ile	Asp	Asn	Met	Ala	Arg	Ala	Phe	Ser	Asn	Val	Leu	Leu
		35					40					45			
Val	Tyr	Ala	Ala	Asn	Met	Asp	Arg	Val	Ser	Ala	Asp	Pro	Ala	Lys	Val
	50					55					60				
Ile	Arg	Glu	Ala	Leu	Ser	Lys	Val	Leu	Val	Tyr	Tyr	Tyr	Pro	Phe	Ala
65					70					75					80
Gly	Arg	Leu	Arg	Asn	Lys	Glu	Asn	Gly	Glu	Leu	Glu	Val	Glu	Cys	Thr
				85					90					95	
Gly	Gln	Gly	Val	Leu	Phe	Leu	Glu	Ala	Met	Ala	Asp	Ser	Asp	Leu	Ser
			100					105					110		
Val	Leu	Thr	Asp	Leu	Asp	Asn	Tyr	Asn	Pro	Ser	Phe	Gln	Gln	Leu	Ile
		115					120					125			
Phe	Ser	Leu	Pro	Gln	Asp	Thr	Asp	Ile	Glu	Asp	Leu	His	Leu	Leu	Ile
	130					135					140				
Val	Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly	Gly	Phe	Val	Val	Gly	Ala	Asn
145					150					155					160
Val	Tyr	Gly	Ser	Ala	Cys	Asp	Ala	Lys	Gly	Phe	Gly	Gln	Phe	Leu	Gln
				165					170					175	
Ser	Met	Ala	Glu	Met	Ala	Arg	Gly	Glu	Val	Lys	Pro	Ser	Ile	Glu	Pro
			180					185					190		
Ile	Trp	Asn	Arg	Glu	Leu	Val	Lys	Leu	Glu	His	Cys	Met	Pro	Phe	Arg
		195					200					205			
Met	Ser	His	Leu	Gln	Ile	Ile	His	Ala	Pro	Val	Ile	Glu	Glu	Lys	Phe
	210					215					220				
Val	Gln	Thr	Ser	Leu	Val	Ile	Asn	Phe	Glu	Ile	Ile	Asn	His	Ile	Arg
225					230					235					240
Arg	Arg	Ile	Met	Glu	Glu	Arg	Lys	Glu	Ser	Leu	Ser	Ser	Phe	Glu	Ile
				245					250					255	
Val	Ala	Ala	Leu	Val	Trp	Leu	Ala	Lys	Ile	Lys	Ala	Phe	Gln	Ile	Pro
			260					265					270		
His	Ser	Glu	Asn	Val	Lys	Leu	Leu	Phe	Ala	Met	Asp	Leu	Arg	Arg	Ser
		275					280					285			
Phe	Asn	Pro	Pro	Leu	Pro	His	Gly	Tyr	Tyr	Gly	Asn	Ala	Phe	Gly	Ile
	290					295					300				
Ala	Cys	Ala	Met	Asp	Asn	Val	His	Asp	Leu	Leu	Ser	Gly	Ser	Leu	Leu
305					310					315					320
Arg	Thr	Ile	Met	Ile	Ile	Lys	Lys	Ser	Lys	Phe	Ser	Leu	His	Lys	Glu
				325					330					335	
Leu	Asn	Ser	Lys	Thr	Val	Met	Ser	Ser	Ser	Val	Val	Asp	Val	Asn	Thr
			340					345					350		

Lys Phe Glu Asp Val Val Ser Ile Ser Asp Trp Arg His Ser Ile Tyr
 355 360 365

Tyr Glu Val Asp Phe Gly Trp Gly Asp Ala Met Asn Val Ser Thr Met
 370 375 380

Leu Gln Gln Gln Glu His Glu Lys Ser Leu Pro Thr Tyr Phe Ser Phe
 385 390 395 400

Leu Gln Ser Thr Lys Asn Met Pro Asp Gly Ile Lys Met Leu Met Phe
 405 410 415

Met Pro Pro Ser Lys Leu Lys Lys Phe Lys Ile Glu Ile Glu Ala Met
 420 425 430

Ile Lys Lys Tyr Val Thr Lys Val Cys Pro Ser Lys Leu
 435 440 445

<210> 53
 <211> 1326
 <212> DNA
 <213> Taxus cuspidata

<400> 53
 atggagaagg caggctcaac agacttccat gtaaagaaat ttgatccagt catggtagcc 60
 ccaagccttc catcgcccaa agctaccgtc cagctctctg tcgttgatag cctaacaatc 120
 tgcaggggaa tttttaacac gttgttggtt ttcaatgcc ctgacaacat ttctgcagat 180
 cctgtaaaaa taattagaga ggctctctcc aagggtgttg tgtattattt ccctcttgct 240
 gggcggctca gaagtaaaga aattggggaa cttgaagtgg agtgcacagg ggatgggtgct 300
 ctgtttgtgg aagccatggt ggaagacacc atttcagctc tacgagatct ggatgacctc 360
 aatccatcat ttcagcagtt agtttttttg catccattgg aactgctat tgaggatctt 420
 catcttgtga ttgttcaggt aacacgtttt acatgtgggg gcattgccgt tggagtgact 480
 ttgccccata gtgtatgtga tggacgtgga gcagcccagt ttgttacagc actggcagag 540
 atggcgaggg gagagggttaa gccctcacta gaaccaatat ggaatagaga attgttgaac 600
 cctgaagacc ctctacatct ccagttaaat caatttgatt cgatatgcc acctccaatg 660
 ctggaggaat tgggtcaagc ttcttttggt ataaacgttg acaccataga atatatgaag 720
 caatgtgtca tggaggaatg taatgaattt tgttcgtctt ttgaagtagt ggcagcattg 780
 gtttgatag cacggacaaa ggctcttcaa attccacata ctgagaatgt gaagcttctc 840
 tttgcgatgg atttgaggaa attatttaat ccccacttc caaatggata ttatggtaat 900
 gccattggta ctgcatatgc aatggataat gtccaagacc tcttaaatgg atctcttttg 960
 cgtgctataa tgattataaa aaaagcaaag gctgatttaa aagataatta ttcgagggtca 1020
 agggtagtta caaaccata ttcattagat gtgaacaaga aatccgacaa cattcttgca 1080
 ttgagtgact ggaggcgggt gggattttat gaagccgatt ttgggtgggg aggtccactg 1140
 aatgtaagtt ccctgcaacg gttggaaaat ggattgccta tgttttagtac ttttctatac 1200
 ctactacctg ccaaaaacaa gtctgatgga atcaagctgc tactgtcttg tatgccacca 1260
 acaacattga aatcatttaa aattgtaatg gaagctatga tagagaaata tgtaagtaaa 1320
 gtgtga 1326

<210> 54
 <211> 441
 <212> PRT
 <213> Taxus cuspidata

<400> 54
 Met Glu Lys Ala Gly Ser Thr Asp Phe His Val Lys Lys Phe Asp Pro
 1 5 10 15
 Val Met Val Ala Pro Ser Leu Pro Ser Pro Lys Ala Thr Val Gln Leu

20	25	30
Ser Val Val Asp Ser Leu Thr Ile Cys Arg Gly Ile Phe Asn Thr Leu		
35	40	45
Leu Val Phe Asn Ala Pro Asp Asn Ile Ser Ala Asp Pro Val Lys Ile		
50	55	60
Ile Arg Glu Ala Leu Ser Lys Val Leu Val Tyr Tyr Phe Pro Leu Ala		
65	70	75
Gly Arg Leu Arg Ser Lys Glu Ile Gly Glu Leu Glu Val Glu Cys Thr		
85	90	95
Gly Asp Gly Ala Leu Phe Val Glu Ala Met Val Glu Asp Thr Ile Ser		
100	105	110
Val Leu Arg Asp Leu Asp Asp Leu Asn Pro Ser Phe Gln Gln Leu Val		
115	120	125
Phe Trp His Pro Leu Asp Thr Ala Ile Glu Asp Leu His Leu Val Ile		
130	135	140
Val Gln Val Thr Arg Phe Thr Cys Gly Gly Ile Ala Val Gly Val Thr		
145	150	155
Leu Pro His Ser Val Cys Asp Gly Arg Gly Ala Ala Gln Phe Val Thr		
165	170	175
Ala Leu Ala Glu Met Ala Arg Gly Glu Val Lys Pro Ser Leu Glu Pro		
180	185	190
Ile Trp Asn Arg Glu Leu Leu Asn Pro Glu Asp Pro Leu His Leu Gln		
195	200	205
Leu Asn Gln Phe Asp Ser Ile Cys Pro Pro Pro Met Leu Glu Glu Leu		
210	215	220
Gly Gln Ala Ser Phe Val Ile Asn Val Asp Thr Ile Glu Tyr Met Lys		
225	230	235
Gln Cys Val Met Glu Glu Cys Asn Glu Phe Cys Ser Ser Phe Glu Val		
245	250	255
Val Ala Ala Leu Val Trp Ile Ala Arg Thr Lys Ala Leu Gln Ile Pro		
260	265	270
His Thr Glu Asn Val Lys Leu Leu Phe Ala Met Asp Leu Arg Lys Leu		
275	280	285
Phe Asn Pro Pro Leu Pro Asn Gly Tyr Tyr Gly Asn Ala Ile Gly Thr		
290	295	300
Ala Tyr Ala Met Asp Asn Val Gln Asp Leu Leu Asn Gly Ser Leu Leu		
305	310	315
Arg Ala Ile Met Ile Ile Lys Lys Ala Lys Ala Asp Leu Lys Asp Asn		
325	330	335
Tyr Ser Arg Ser Arg Val Val Thr Asn Pro Tyr Ser Leu Asp Val Asn		
340	345	350

Lys Lys Ser Asp Asn Ile Leu Ala Leu Ser Asp Trp Arg Arg Leu Gly
 355 360 365
 Phe Tyr Glu Ala Asp Phe Gly Trp Gly Gly Pro Leu Asn Val Ser Ser
 370 375 380
 Leu Gln Arg Leu Glu Asn Gly Leu Pro Met Phe Ser Thr Phe Leu Tyr
 385 390 395 400
 Leu Leu Pro Ala Lys Asn Lys Ser Asp Gly Ile Lys Leu Leu Leu Ser
 405 410 415
 Cys Met Pro Pro Thr Thr Leu Lys Ser Phe Lys Ile Val Met Glu Ala
 420 425 430
 Met Ile Glu Lys Tyr Val Ser Lys Val
 435 440

<210> 55
 <211> 1347
 <212> DNA
 <213> Taxus cuspidata

<400> 55
 atggagaagg gaaatgcgag tgatgtgcca gaattgcatg tacagatctg tgagcggggtg 60
 atgggtgaaac catgcgtgcc ttctccttcg ccaaattcttg tcctccagct ctccgcgggtg 120
 gacagactgc cagggatgaa gtttgctact tttagcgccg tgttagtcta caatgccagc 180
 tctcactcca tttttgcaaa tcttgacag attattcggc aggctctctc caagggtgtg 240
 cagtattatc ccgcttttgc cgggcgggac agacagaaag aaaatgagga actggaagtg 300
 gagtgcacag gggaggggtgc gctgtttgtg gaagcccttg tgcacaatga tctttcagtc 360
 ttgcgagatt tggatgcccc aaatgcatct tatgagcagt tgctcttttc gcttccgccc 420
 aatatacagg ttcaggacct ccattcctctg attcttcagg taactcgttt tacgtgtgga 480
 ggttttgttg tgggagtagg ttttcacccat ggtatatgcg acgcacgagg aggaactcaa 540
 tttcttcaag gcctagcaga tatggcaagg ggagagacta agcctttagt ggaaccagta 600
 tggaatagag aactgataaa gcccggaagat ctaatgcacc tccaatttca taagtttggt 660
 ttgatacgcc aacctctaaa acttgatgaa atttgtcaag catcttttac tataaactca 720
 gagataataa attacatcaa acaatgtgtt atagaagaat gtaacgaaat tttctctgca 780
 tttgaagttg tagtagcatt aacttggata gcaaggacaa aggccttttca aattccacat 840
 aatgagaatg tgatgatgct ctttgggaatg gacgcgagga aatattttta tccccactt 900
 ccaaagggat attatggtaa tgccattggg acttcatgtg taattgaaaa tgtacaagac 960
 ctcttaaatg gatctctttc gcgtgctgta atgattacaa agaaatcaaa gatcccttta 1020
 attgagaatt taaggtcaag aattgtggcg aaccaatctg gagtagatga ggaaattaag 1080
 catgaaaacg tagttggatt tggagatttg aggcgatttg gatttcatga agtggacttc 1140
 ggatcgggag atgcagtga catcagcccc atacaacaac gactagagga tgatcaattg 1200
 gctatgcgaa attattttct tttccttcga ccttacaagg acatgcctaa tggaatcaaa 1260
 atactaatgt tcatggatcc atcaagagtg aaattattca aagatgaaat ggaagccatg 1320
 ataattaaat atatgccgaa agcctaa 1347

<210> 56
 <211> 448
 <212> PRT
 <213> Taxus cuspidata

<400> 56
 Met Glu Lys Gly Asn Ala Ser Asp Val Pro Glu Leu His Val Gln Ile
 1 5 10 15
 Cys Glu Arg Val Met Val Lys Pro Cys Val Pro Ser Pro Ser Pro Asn

20					25					30					
Leu	Val	Leu	Gln	Leu	Ser	Ala	Val	Asp	Arg	Leu	Pro	Gly	Met	Lys	Phe
		35					40					45			
Ala	Thr	Phe	Ser	Ala	Val	Leu	Val	Tyr	Asn	Ala	Ser	Ser	His	Ser	Ile
		50				55					60				
Phe	Ala	Asn	Pro	Ala	Gln	Ile	Ile	Arg	Gln	Ala	Leu	Ser	Lys	Val	Leu
		65				70					75				80
Gln	Tyr	Tyr	Pro	Ala	Phe	Ala	Gly	Arg	Ile	Arg	Gln	Lys	Glu	Asn	Glu
				85					90					95	
Glu	Leu	Glu	Val	Glu	Cys	Thr	Gly	Glu	Gly	Ala	Leu	Phe	Val	Glu	Ala
			100					105					110		
Leu	Val	Asp	Asn	Asp	Leu	Ser	Val	Leu	Arg	Asp	Leu	Asp	Ala	Gln	Asn
		115					120					125			
Ala	Ser	Tyr	Glu	Gln	Leu	Leu	Phe	Ser	Leu	Pro	Pro	Asn	Ile	Gln	Val
		130				135					140				
Gln	Asp	Leu	His	Pro	Leu	Ile	Leu	Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly
		145				150					155				160
Gly	Phe	Val	Val	Gly	Val	Gly	Phe	His	His	Gly	Ile	Cys	Asp	Ala	Arg
				165					170					175	
Gly	Gly	Thr	Gln	Phe	Leu	Gln	Gly	Leu	Ala	Asp	Met	Ala	Arg	Gly	Glu
			180					185					190		
Thr	Lys	Pro	Leu	Val	Glu	Pro	Val	Trp	Asn	Arg	Glu	Leu	Ile	Lys	Pro
		195					200					205			
Glu	Asp	Leu	Met	His	Leu	Gln	Phe	His	Lys	Phe	Gly	Leu	Ile	Arg	Gln
		210				215					220				
Pro	Leu	Lys	Leu	Asp	Glu	Ile	Cys	Gln	Ala	Ser	Phe	Thr	Ile	Asn	Ser
		225				230					235			240	
Glu	Ile	Ile	Asn	Tyr	Ile	Lys	Gln	Cys	Val	Ile	Glu	Glu	Cys	Asn	Glu
			245						250					255	
Ile	Phe	Ser	Ala	Phe	Glu	Val	Val	Val	Ala	Leu	Thr	Trp	Ile	Ala	Arg
			260					265					270		
Thr	Lys	Ala	Phe	Gln	Ile	Pro	His	Asn	Glu	Asn	Val	Met	Met	Leu	Phe
		275					280					285			
Gly	Met	Asp	Ala	Arg	Lys	Tyr	Phe	Asn	Pro	Pro	Leu	Pro	Lys	Gly	Tyr
		290				295					300				
Tyr	Gly	Asn	Ala	Ile	Gly	Thr	Ser	Cys	Val	Ile	Glu	Asn	Val	Gln	Asp
		305				310					315			320	
Leu	Leu	Asn	Gly	Ser	Leu	Ser	Arg	Ala	Val	Met	Ile	Thr	Lys	Lys	Ser
			325						330					335	
Lys	Ile	Pro	Leu	Ile	Glu	Asn	Leu	Arg	Ser	Arg	Ile	Val	Ala	Asn	Gln
			340					345					350		

Ser Gly Val Asp Glu Glu Ile Lys His Glu Asn Val Val Gly Phe Gly
 355 360 365

Asp Trp Arg Arg Leu Gly Phe His Glu Val Asp Phe Gly Ser Gly Asp
 370 375 380

Ala Val Asn Ile Ser Pro Ile Gln Gln Arg Leu Glu Asp Asp Gln Leu
 385 390 395 400

Ala Met Arg Asn Tyr Phe Leu Phe Leu Arg Pro Tyr Lys Asp Met Pro
 405 410 415

Asn Gly Ile Lys Ile Leu Met Phe Met Asp Pro Ser Arg Val Lys Leu
 420 425 430

Phe Lys Asp Glu Met Glu Ala Met Ile Ile Lys Tyr Met Pro Lys Ala
 435 440 445

<210> 57
 <211> 1317
 <212> DNA
 <213> Taxus cuspidata

<400> 57
 atggagaagt tacatgtgga tatcattgag agagtgaagg tggcgccatg ccttccatcg 60
 tccaaagaaa ttctccagct ctccagcctc gacaacatac tcagatgtta tgtcagcgta 120
 ttgttcgtct acgacaggggt ttcaactggt tctgcaaatac ctgcaaaaac aattcgagag 180
 gctctctcca aggttttggt ttattattca ccttttgctg gaaggctcag aaacaaagaa 240
 aatgggggatc ttgaagtgga gtgcagtggg gaggggtgctg tctttgtgga agccatggcg 300
 gacaacgagc tttcagtcctt acaagatttg gatgagtact gtacatcgct taaacagcta 360
 atttttacag taccaatgga tacgaaaatt gaagacctcc atcttctaag tgttcaggta 420
 actagtttta catgtggggg atttggttggt ggaataagtt tctaccatac tatatgtgat 480
 ggaaaaggac tgggccagtt tcttcaaggc atgagtgaga tttccaaggg agcattttaa 540
 ccctcactag aaccagtatg gaatagagaa atggtgaagc ctgaacacct tatgttcctc 600
 cagtttaata attttgaatt cgtaccacat cctcttaaat ttaagaagat tggttaaagca 660
 tctattgaaa ttaactttga gacaataaat tgtttcaagc aatgcatgat ggaagaatgt 720
 aaagaaaatt tctctacatt tgaaattgta gcagcactga tttggctagc caagacaaag 780
 tctttccaaa ttccagatag tgagaatgtg aaacttatgt ttgcagtcga catgaggaca 840
 tcgtttgacc cccctcttcc aaagggatat tatggtaatg ttattggtat tgcagggtgca 900
 atagataatg tcaaagaact cttaagtgga tcaattttgc gtgctctaata tattatccaa 960
 aagacaattt tctcttttaa agataatttc atatcaagaa gattgatgaa accatctaca 1020
 ttggatgtga atatgaagca tgaaaatgta gttctcttag gggattggag gaatttggga 1080
 tattatgagg cagattgtgg gtgtggaaat ctatcaaagc taattcccat ggatcaacaa 1140
 atagagcatg agtcacctgt gcaaagtaga tttatgttgc ttcgatcatc caagaacatg 1200
 caaaatggaa tcaagatact aatgtccatg cctgaatcaa tggcgaaacc attcaaaagt 1260
 gaaatgaaat tcacaataaa aaaatatgtg actggagcgt gtttctctga gttatga 1317

<210> 58
 <211> 438
 <212> PRT
 <213> Taxus cuspidata

<400> 58
 Met Glu Lys Leu His Val Asp Ile Ile Glu Arg Val Lys Val Ala Pro
 1 5 10 15

Cys	Leu	Pro	Ser	Ser	Lys	Glu	Ile	Leu	Gln	Leu	Ser	Ser	Leu	Asp	Asn	
			20					25					30			
Ile	Leu	Arg	Cys	Tyr	Val	Ser	Val	Leu	Phe	Val	Tyr	Asp	Arg	Val	Ser	
		35					40					45				
Thr	Val	Ser	Ala	Asn	Pro	Ala	Lys	Thr	Ile	Arg	Glu	Ala	Leu	Ser	Lys	
	50					55					60					
Val	Leu	Val	Tyr	Tyr	Ser	Pro	Phe	Ala	Gly	Arg	Leu	Arg	Asn	Lys	Glu	
65					70					75					80	
Asn	Gly	Asp	Leu	Glu	Val	Glu	Cys	Ser	Gly	Glu	Gly	Ala	Val	Phe	Val	
				85					90					95		
Glu	Ala	Met	Ala	Asp	Asn	Glu	Leu	Ser	Val	Leu	Gln	Asp	Leu	Asp	Glu	
			100					105					110			
Tyr	Cys	Thr	Ser	Leu	Lys	Gln	Leu	Ile	Phe	Thr	Val	Pro	Met	Asp	Thr	
		115					120					125				
Lys	Ile	Glu	Asp	Leu	His	Leu	Leu	Ser	Val	Gln	Val	Thr	Ser	Phe	Thr	
	130					135					140					
Cys	Gly	Gly	Phe	Val	Val	Gly	Ile	Ser	Phe	Tyr	His	Thr	Ile	Cys	Asp	
145					150					155					160	
Gly	Lys	Gly	Leu	Gly	Gln	Phe	Leu	Gln	Gly	Met	Ser	Glu	Ile	Ser	Lys	
				165					170					175		
Gly	Ala	Phe	Lys	Pro	Ser	Leu	Glu	Pro	Val	Trp	Asn	Arg	Glu	Met	Val	
			180					185					190			
Lys	Pro	Glu	His	Leu	Met	Phe	Leu	Gln	Phe	Asn	Asn	Phe	Glu	Phe	Val	
		195					200					205				
Pro	His	Pro	Leu	Lys	Phe	Lys	Lys	Ile	Val	Lys	Ala	Ser	Ile	Glu	Ile	
	210					215					220					
Asn	Phe	Glu	Thr	Ile	Asn	Cys	Phe	Lys	Gln	Cys	Met	Met	Glu	Glu	Cys	
225					230					235					240	
Lys	Glu	Asn	Phe	Ser	Thr	Phe	Glu	Ile	Val	Ala	Ala	Leu	Ile	Trp	Leu	
				245					250					255		
Ala	Lys	Thr	Lys	Ser	Phe	Gln	Ile	Pro	Asp	Ser	Glu	Asn	Val	Lys	Leu	
			260					265					270			
Met	Phe	Ala	Val	Asp	Met	Arg	Thr	Ser	Phe	Asp	Pro	Pro	Leu	Pro	Lys	
		275					280					285				
Gly	Tyr	Tyr	Gly	Asn	Val	Ile	Gly	Ile	Ala	Gly	Ala	Ile	Asp	Asn	Val	
	290					295					300					
Lys	Glu	Leu	Leu	Ser	Gly	Ser	Ile	Leu	Arg	Ala	Leu	Ile	Ile	Ile	Gln	
305					310					315					320	
Lys	Thr	Ile	Phe	Ser	Leu	Lys	Asp	Asn	Phe	Ile	Ser	Arg	Arg	Leu	Met	
				325					330					335		

Lys Pro Ser Thr Leu Asp Val Asn Met Lys His Glu Asn Val Val Leu
 340 345 350
 Leu Gly Asp Trp Arg Asn Leu Gly Tyr Tyr Glu Ala Asp Cys Gly Cys
 355 360 365
 Gly Asn Leu Ser Asn Val Ile Pro Met Asp Gln Gln Ile Glu His Glu
 370 375 380
 Ser Pro Val Gln Ser Arg Phe Met Leu Leu Arg Ser Ser Lys Asn Met
 385 390 395 400
 Gln Asn Gly Ile Lys Ile Leu Met Ser Met Pro Glu Ser Met Ala Lys
 405 410 415
 Pro Phe Lys Ser Glu Met Lys Phe Thr Ile Lys Lys Tyr Val Thr Gly
 420 425 430
 Ala Cys Phe Ser Glu Leu
 435

<210> 59
 <211> 331
 <212> PRT
 <213> Arabidopsis thaliana

<400> 59
 Met Ser Gln Ile Leu Glu Asn Pro Asn Pro Asn Glu Leu Asn Lys Leu
 1 5 10 15
 His Pro Phe Glu Phe His Glu Val Ser Asp Val Pro Leu Thr Val Gln
 20 25 30
 Leu Thr Phe Phe Glu Cys Gly Gly Leu Ala Leu Gly Ile Gly Leu Ser
 35 40 45
 His Lys Leu Cys Asp Ala Leu Ser Gly Leu Ile Phe Val Asn Ser Trp
 50 55 60
 Ala Ala Phe Ala Arg Gly Gln Thr Asp Glu Ile Ile Thr Pro Ser Phe
 65 70 75 80
 Asp Leu Ala Lys Met Phe Pro Pro Cys Asp Ile Glu Asn Leu Asn Met
 85 90 95
 Ala Thr Gly Ile Thr Lys Glu Asn Ile Val Thr Arg Arg Phe Val Phe
 100 105 110
 Leu Arg Ser Ser Val Glu Ser Leu Arg Glu Arg Phe Ser Gly Asn Lys
 115 120 125
 Lys Ile Arg Ala Thr Arg Val Glu Val Leu Ser Val Phe Ile Trp Ser
 130 135 140
 Arg Phe Met Ala Ser Thr Asn His Asp Asp Lys Thr Gly Lys Ile Tyr
 145 150 155 160
 Thr Leu Ile His Pro Val Asn Leu Arg Arg Gln Ala Asp Pro Asp Ile
 165 170 175

Pro Asp Asn Met Phe Gly Asn Ile Met Arg Phe Ser Val Thr Val Pro
 180 185 190
 Met Met Ile Ile Asn Glu Asn Asp Glu Glu Lys Ala Ser Leu Val Asp
 195 200 205
 Gln Met Arg Glu Glu Ile Arg Lys Ile Asp Ala Val Tyr Val Lys Lys
 210 215 220
 Leu Gln Glu Asp Asn Arg Gly His Leu Glu Phe Leu Asn Lys Gln Ala
 225 230 235 240
 Ser Gly Phe Val Asn Gly Glu Ile Val Ser Phe Ser Phe Thr Ser Leu
 245 250 255
 Cys Lys Phe Pro Val Tyr Glu Ala Asp Phe Gly Trp Gly Lys Pro Leu
 260 265 270
 Trp Val Ala Ser Ala Arg Met Ser Tyr Lys Asn Leu Val Ala Phe Ile
 275 280 285
 Asp Thr Lys Glu Gly Asp Gly Ile Glu Ala Trp Ile Asn Leu Asp Gln
 290 295 300
 Asn Asp Met Ser Arg Phe Glu Ala Asp Glu Glu Leu Leu Arg Tyr Val
 305 310 315 320
 Ser Ser Asn Pro Ser Val Met Val Ser Val Ser
 325 330

<210> 60
 <211> 435
 <212> PRT
 <213> Arabidopsis thaliana

<400> 60
 Met Glu Ala Lys Leu Glu Val Thr Gly Lys Glu Val Ile Lys Pro Ala
 1 5 10 15
 Ser Pro Ser Pro Arg Asp Arg Leu Gln Leu Ser Ile Leu Asp Leu Tyr
 20 25 30
 Cys Pro Gly Ile Tyr Val Ser Thr Ile Phe Phe Tyr Asp Leu Ile Thr
 35 40 45
 Glu Ser Ser Glu Val Phe Ser Glu Asn Leu Lys Leu Ser Leu Ser Glu
 50 55 60
 Thr Leu Ser Arg Phe Tyr Pro Leu Ala Gly Arg Ile Glu Gly Leu Ser
 65 70 75 80
 Ile Ser Cys Asn Asp Glu Gly Ala Val Phe Thr Glu Ala Arg Thr Asp
 85 90 95
 Leu Leu Leu Pro Asp Phe Leu Arg Asn Leu Asn Thr Asp Ser Leu Ser
 100 105 110
 Gly Phe Leu Pro Thr Leu Ala Ala Gly Glu Ser Pro Ala Ala Trp Pro
 115 120 125

Leu	Leu	Ser	Val	Lys	Val	Thr	Phe	Phe	Gly	Ser	Gly	Ser	Gly	Val	Ala			
130						135					140							
Val	Ser	Val	Ser	Val	Ser	His	Lys	Ile	Cys	Asp	Ile	Ala	Ser	Leu	Val			
145					150					155					160			
Thr	Phe	Val	Lys	Asp	Trp	Ala	Thr	Thr	Thr	Ala	Lys	Gly	Lys	Ser	Asn			
				165					170					175				
Ser	Thr	Ile	Glu	Phe	Ala	Glu	Thr	Thr	Ile	Tyr	Pro	Pro	Pro	Pro	Ser			
			180					185					190					
His	Met	Tyr	Glu	Gln	Phe	Pro	Ser	Thr	Asp	Ser	Asp	Ser	Asn	Ile	Thr			
		195					200					205						
Ser	Lys	Tyr	Val	Leu	Lys	Arg	Phe	Val	Phe	Glu	Pro	Ser	Lys	Ile	Ala			
	210					215					220							
Glu	Leu	Lys	His	Lys	Ala	Ala	Ser	Glu	Ser	Val	Pro	Val	Pro	Thr	Arg			
225					230					235					240			
Val	Glu	Ala	Ile	Met	Ser	Leu	Ile	Trp	Arg	Cys	Ala	Arg	Asn	Ser	Ser			
				245					250					255				
Arg	Ser	Asn	Leu	Leu	Ile	Pro	Arg	Gln	Ala	Val	Met	Trp	Gln	Ala	Met			
			260					265					270					
Asp	Ile	Arg	Leu	Arg	Ile	Pro	Ser	Ser	Val	Ala	Pro	Lys	Asp	Val	Ile			
		275					280					285						
Gly	Asn	Leu	Gln	Ser	Gly	Phe	Ser	Leu	Lys	Lys	Asp	Ala	Glu	Ser	Glu			
	290					295					300							
Phe	Glu	Ile	Pro	Glu	Ile	Val	Ala	Thr	Phe	Arg	Lys	Asn	Lys	Glu	Arg			
305					310					315					320			
Val	Asn	Glu	Met	Ile	Lys	Glu	Ser	Leu	Gln	Gly	Asn	Thr	Ile	Gly	Gln			
				325					330					335				
Ser	Leu	Leu	Ser	Leu	Met	Ala	Glu	Thr	Val	Ser	Glu	Ser	Thr	Glu	Ile			
			340					345					350					
Asp	Arg	Tyr	Ile	Met	Ser	Ser	Trp	Cys	Arg	Lys	Pro	Phe	Tyr	Glu	Val			
		355					360					365						
Asp	Phe	Gly	Ser	Gly	Ser	Pro	Val	Trp	Val	Gly	Tyr	Ala	Ser	His	Thr			
	370					375					380							
Ile	Tyr	Asp	Asn	Met	Val	Gly	Val	Val	Leu	Ile	Asp	Ser	Lys	Glu	Gly			
385					390					395					400			
Asp	Gly	Val	Glu	Ala	Trp	Ile	Ser	Leu	Pro	Glu	Glu	Asp	Met	Ser	Val			
				405					410									
Phe	Val	Asp	Asp	Gln	Glu	Leu	Leu	Ala	Tyr	Ala	Val	Leu	Asn	Pro	Pro			
			420					425					430					
Val	Val	Ala																
		435																

<210> 61
 <211> 458
 <212> PRT
 <213> Arabidopsis thaliana

<400> 61
 Met Pro Met Leu Met Ala Thr Arg Ile Asp Ile Ile Gln Lys Leu Asn
 1 5 10 15
 Val Tyr Pro Arg Phe Gln Asn His Asp Lys Lys Lys Leu Ile Thr Leu
 20 25 30
 Ser Asn Leu Asp Arg Gln Cys Pro Leu Leu Met Tyr Ser Val Phe Phe
 35 40 45
 Tyr Lys Asn Thr Thr Thr Arg Asp Phe Asp Ser Val Phe Ser Asn Leu
 50 55 60
 Lys Leu Gly Leu Glu Glu Thr Met Ser Val Trp Tyr Pro Ala Ala Gly
 65 70 75 80
 Arg Leu Gly Leu Asp Gly Gly Gly Cys Lys Leu Asn Ile Arg Cys Asn
 85 90 95
 Asp Gly Gly Ala Val Met Val Glu Ala Val Ala Thr Gly Val Lys Leu
 100 105 110
 Ser Glu Leu Gly Asp Leu Thr Gln Tyr Asn Glu Phe Tyr Glu Asn Leu
 115 120 125
 Val Tyr Lys Pro Ser Leu Asp Gly Asp Phe Ser Val Met Pro Leu Val
 130 135 140
 Val Ala Gln Val Thr Arg Phe Ala Cys Gly Gly Tyr Ser Ile Gly Ile
 145 150 155 160
 Gly Thr Ser His Ser Leu Phe Asp Gly Ile Ser Ala Tyr Glu Phe Ile
 165 170 175
 His Ala Trp Ala Ser Asn Ser His Ile His Asn Lys Ser Asn Ser Lys
 180 185 190
 Ile Thr Asn Lys Lys Glu Asp Val Val Ile Lys Pro Val His Asp Arg
 195 200 205
 Arg Asn Leu Leu Val Asn Arg Asp Ala Val Arg Glu Thr Asn Ala Ala
 210 215 220
 Ala Ile Cys His Leu Tyr Gln Leu Ile Lys Gln Ala Met Met Thr Tyr
 225 230 235 240
 Gln Glu Gln Asn Arg Asn Leu Glu Leu Pro Asp Ser Gly Phe Val Ile
 245 250 255
 Lys Thr Phe Glu Leu Asn Gly Asp Ala Ile Glu Ser Met Lys Lys Lys
 260 265 270
 Ser Leu Glu Gly Phe Met Cys Ser Ser Phe Glu Phe Leu Ala Ala His
 275 280 285
 Leu Trp Lys Ala Arg Thr Arg Ala Leu Gly Leu Arg Arg Asp Ala Met

290		295		300
Val Cys Leu Gln Phe Ala Val Asp Ile Arg Lys Arg Thr Glu Thr Pro				
305		310		315 320
Leu Pro Glu Gly Phe Ser Gly Asn Ala Tyr Val Leu Ala Ser Val Ala				
		325		330 335
Ser Thr Ala Arg Glu Leu Leu Glu Glu Leu Thr Leu Glu Ser Ile Val				
		340		345 350
Asn Lys Ile Arg Glu Ala Lys Lys Ser Ile Asp Gln Gly Tyr Ile Asn				
		355		360 365
Ser Tyr Met Glu Ala Leu Gly Gly Ser Asn Asp Gly Asn Leu Pro Pro				
		370		375 380
Leu Lys Glu Leu Thr Leu Ile Ser Asp Trp Thr Lys Met Pro Phe His				
		385		390 395 400
Asn Val Gly Phe Gly Asn Gly Gly Glu Pro Ala Asp Tyr Met Ala Pro				
		405		410 415
Leu Cys Pro Pro Val Pro Gln Val Ala Tyr Phe Met Lys Asn Pro Lys				
		420		425 430
Asp Ala Lys Gly Val Leu Val Arg Ile Gly Leu Asp Pro Arg Asp Val				
		435		440 445
Asn Gly Phe Ser Asn His Phe Leu Asp Cys				
		450		455

<210> 62
 <211> 436
 <212> PRT
 <213> Arabidopsis thaliana

<400> 62
Met Glu Lys Asn Val Glu Ile Leu Ser Arg Glu Ile Val Lys Pro Ser
1 5 10 15
Ser Pro Thr Pro Asp Asp Lys Arg Ile Leu Asn Leu Ser Leu Leu Asp
20 25 30
Ile Leu Ser Ser Pro Met Tyr Thr Gly Ala Leu Leu Phe Tyr Ala Ala
35 40 45
Asp Pro Gln Asn Leu Leu Gly Phe Ser Thr Glu Glu Thr Ser Leu Lys
50 55 60
Leu Lys Lys Ser Leu Ser Lys Thr Leu Pro Ile Phe Tyr Pro Leu Ala
65 70 75 80
Gly Arg Ile Ile Gly Ser Phe Val Glu Cys Asn Asp Glu Gly Ala Val
85 90 95
Phe Ile Glu Ala Arg Val Asp His Leu Leu Ser Glu Phe Leu Lys Cys
100 105 110
Pro Val Pro Glu Ser Leu Glu Leu Leu Ile Pro Val Glu Ala Lys Ser

115					120					125					
Arg	Glu	Ala	Val	Thr	Trp	Pro	Val	Leu	Leu	Ile	Gln	Ala	Asn	Phe	Phe
130						135					140				
Ser	Cys	Gly	Gly	Leu	Val	Ile	Thr	Ile	Cys	Val	Ser	His	Lys	Ile	Thr
145					150					155					160
Asp	Ala	Thr	Ser	Leu	Ala	Met	Phe	Ile	Arg	Gly	Trp	Ala	Glu	Ser	Ser
				165					170					175	
Arg	Gly	Leu	Gly	Ile	Thr	Leu	Ile	Pro	Ser	Phe	Thr	Ala	Ser	Glu	Val
			180					185					190		
Phe	Pro	Lys	Pro	Leu	Asp	Glu	Leu	Pro	Ser	Lys	Pro	Met	Asp	Arg	Lys
		195					200					205			
Glu	Glu	Val	Glu	Glu	Met	Ser	Cys	Val	Thr	Lys	Arg	Phe	Val	Phe	Asp
	210					215					220				
Ala	Ser	Lys	Ile	Lys	Lys	Leu	Arg	Ala	Lys	Ala	Ser	Arg	Asn	Leu	Val
225					230					235					240
Lys	Asn	Pro	Thr	Arg	Val	Glu	Ala	Val	Thr	Ala	Leu	Phe	Trp	Arg	Cys
				245					250					255	
Val	Thr	Lys	Val	Ser	Arg	Leu	Ser	Ser	Leu	Thr	Pro	Arg	Thr	Ser	Val
			260					265					270		
Leu	Gln	Ile	Leu	Val	Asn	Leu	Arg	Gly	Lys	Val	Asp	Ser	Leu	Cys	Glu
		275					280					285			
Asn	Thr	Ile	Gly	Asn	Met	Leu	Ser	Leu	Met	Ile	Leu	Lys	Asn	Glu	Glu
	290					295					300				
Ala	Ala	Ile	Glu	Arg	Ile	Gln	Asp	Val	Val	Asp	Glu	Ile	Arg	Arg	Ala
305					310					315					320
Lys	Glu	Ile	Phe	Ser	Leu	Asn	Cys	Lys	Glu	Met	Ser	Lys	Ser	Ser	Ser
				325					330					335	
Arg	Ile	Phe	Glu	Leu	Leu	Glu	Glu	Ile	Gly	Lys	Val	Tyr	Gly	Arg	Gly
			340					345					350		
Asn	Glu	Met	Asp	Leu	Trp	Met	Ser	Asn	Ser	Trp	Cys	Lys	Leu	Gly	Leu
		355					360					365			
Tyr	Asp	Ala	Asp	Phe	Gly	Trp	Gly	Lys	Pro	Val	Trp	Val	Thr	Gly	Arg
	370					375					380				
Gly	Thr	Ser	His	Phe	Lys	Asn	Leu	Met	Leu	Leu	Ile	Asp	Thr	Lys	Asp
385					390					395					400
Gly	Glu	Gly	Ile	Glu	Ala	Trp	Ile	Thr	Leu	Thr	Glu	Glu	Gln	Met	Ser
				405					410					415	
Leu	Phe	Glu	Cys	Asp	Gln	Glu	Leu	Leu	Glu	Ser	Ala	Ser	Leu	Asn	Pro
			420				425						430		
Pro	Val	Leu	Ile												
			435												

<210> 63
 <211> 482
 <212> PRT
 <213> Arabidopsis thaliana

<400> 63
 Met Pro Ser Leu Glu Lys Ser Val Thr Ile Ile Ser Arg Asn Arg Val
 1 5 10 15
 Phe Pro Asp Gln Lys Ser Thr Leu Val Asp Leu Lys Leu Ser Val Ser
 20 25 30
 Asp Leu Pro Met Leu Ser Cys His Tyr Ile Gln Lys Gly Cys Leu Phe
 35 40 45
 Thr Cys Pro Asn Leu Pro Leu Pro Ala Leu Ile Ser His Leu Lys His
 50 55 60
 Ser Leu Ser Ile Thr Leu Thr His Phe Pro Pro Leu Ala Gly Arg Leu
 65 70 75 80
 Ser Thr Ser Ser Ser Gly His Val Phe Leu Thr Cys Asn Asp Ala Gly
 85 90 95
 Ala Asp Phe Val Phe Ala Gln Ala Lys Ser Ile His Val Ser Asp Val
 100 105 110
 Ile Ala Gly Ile Asp Val Pro Asp Val Val Lys Glu Phe Phe Thr Tyr
 115 120 125
 Asp Arg Ala Val Ser Tyr Glu Gly His Asn Arg Pro Ile Leu Ala Val
 130 135 140
 Gln Val Thr Glu Leu Asn Asp Gly Val Phe Ile Gly Cys Ser Val Asn
 145 150 155 160
 His Ala Val Thr Asp Gly Thr Ser Leu Trp Asn Phe Ile Asn Thr Phe
 165 170 175
 Ala ,Glu Val Ser Arg Gly Ala Lys Asn Val Thr Arg Gln Pro Asp Phe
 180 185 190
 Thr Arg Glu Ser Val Leu Ile Ser Pro Ala Val Leu Lys Val Pro Gln
 195 200 205
 Gly Gly Pro Lys Val Thr Phe Asp Glu Asn Ala Pro Leu Arg Glu Arg
 210 215 220
 Ile Phe Ser Phe Ser Arg Glu Ser Ile Gln Glu Leu Lys Ala Val Val
 225 230 235 240
 Asn Lys Lys Lys Trp Leu Thr Val Asp Asn Gly Glu Ile Asp Gly Val
 245 250 255
 Glu Leu Leu Gly Lys Gln Ser Asn Asp Lys Leu Asn Gly Lys Glu Asn
 260 265 270
 Gly Ile Leu Thr Glu Met Leu Glu Ser Leu Phe Gly Arg Asn Asp Ala
 275 280 285

Val Ser Lys Pro Val Ala Val Glu Ile Ser Ser Phe Gln Ser Leu Cys
 290 295 300
 Ala Leu Leu Trp Arg Ala Ile Thr Arg Ala Arg Lys Leu Pro Ser Ser
 305 310 315 320
 Lys Thr Thr Thr Phe Arg Met Ala Val Asn Cys Arg His Arg Leu Ser
 325 330 335
 Pro Lys Leu Asn Pro Glu Tyr Phe Gly Asn Ala Ile Gln Ser Val Pro
 340 345 350
 Thr Phe Ala Thr Ala Ala Glu Val Leu Ser Arg Asp Leu Lys Trp Cys
 355 360 365
 Ala Asp Gln Leu Asn Gln Ser Val Ala Ala His Gln Asp Gly Arg Ile
 370 375 380
 Arg Ser Val Val Ala Asp Trp Glu Ala Asn Pro Arg Cys Phe Pro Leu
 385 390 395 400
 Gly Asn Ala Asp Gly Ala Ser Val Thr Met Gly Ser Ser Pro Arg Phe
 405 410 415
 Pro Met Tyr Asp Asn Asp Phe Gly Trp Gly Arg Pro Val Ala Val Arg
 420 425 430
 Ser Gly Arg Ser Asn Lys Phe Asp Gly Lys Ile Ser Ala Phe Pro Gly
 435 440 445
 Arg Glu Gly Asn Gly Thr Val Asp Leu Glu Val Val Leu Ser Pro Glu
 450 455 460
 Thr Met Ala Gly Ile Glu Ser Asp Gly Glu Phe Met Arg Tyr Val Thr
 465 470 475 480

Asn Lys

<210> 64
 <211> 461
 <212> PRT
 <213> Arabidopsis thaliana

<400> 64
 Met Ala Ser Cys Ile Gln Glu Leu His Phe Thr His Leu His Ile Pro
 1 5 10 15
 Val Thr Ile Asn Gln Gln Phe Leu Val His Pro Ser Ser Pro Thr Pro
 20 25 30
 Ala Asn Gln Ser Pro His His Ser Leu Tyr Leu Ser Asn Leu Asp Asp
 35 40 45
 Ile Ile Gly Ala Arg Val Phe Thr Pro Ser Val Tyr Phe Tyr Pro Ser
 50 55 60
 Thr Asn Asn Arg Glu Ser Phe Val Leu Lys Arg Leu Gln Asp Ala Leu
 65 70 75 80

Ser Glu Val Leu Val Pro Tyr Tyr Pro Leu Ser Gly Arg Leu Arg Glu
 85 90 95
 Val Glu Asn Gly Lys Leu Glu Val Phe Phe Gly Glu Glu Gln Gly Val
 100 105 110
 Leu Met Val Ser Ala Asn Ser Ser Met Asp Leu Ala Asp Leu Gly Asp
 115 120 125
 Leu Thr Val Pro Asn Pro Ala Trp Leu Pro Leu Ile Phe Arg Asn Pro
 130 135 140
 Gly Glu Glu Ala Tyr Lys Ile Leu Glu Met Pro Leu Leu Ile Ala Gln
 145 150 155 160
 Val Thr Phe Phe Thr Cys Gly Gly Phe Ser Leu Gly Ile Arg Leu Cys
 165 170 175
 His Cys Ile Cys Asp Gly Phe Gly Ala Met Gln Phe Leu Gly Ser Trp
 180 185 190
 Ala Ala Thr Ala Lys Thr Gly Lys Leu Ile Ala Asp Pro Glu Pro Val
 195 200 205
 Trp Asp Arg Glu Thr Phe Lys Pro Arg Asn Pro Pro Met Val Lys Tyr
 210 215 220
 Pro His His Glu Tyr Leu Pro Ile Glu Glu Arg Ser Asn Leu Thr Asn
 225 230 235 240
 Ser Leu Trp Asp Thr Lys Pro Leu Gln Lys Cys Tyr Arg Ile Ser Lys
 245 250 255
 Glu Phe Gln Cys Arg Val Lys Ser Ile Ala Gln Gly Glu Asp Pro Thr
 260 265 270
 Leu Val Cys Ser Thr Phe Asp Ala Met Ala Ala His Ile Trp Arg Ser
 275 280 285
 Trp Val Lys Ala Leu Asp Val Lys Pro Leu Asp Tyr Asn Leu Arg Leu
 290 295 300
 Thr Phe Ser Val Asn Val Arg Thr Arg Leu Glu Thr Leu Lys Leu Arg
 305 310 315 320
 Lys Gly Phe Tyr Gly Asn Val Val Cys Leu Ala Cys Ala Met Ser Ser
 325 330 335
 Val Glu Ser Leu Ile Asn Asp Ser Leu Ser Lys Thr Thr Arg Leu Val
 340 345 350
 Gln Asp Ala Arg Leu Arg Val Ser Glu Asp Tyr Leu Arg Ser Met Val
 355 360 365
 Asp Tyr Val Asp Val Lys Arg Pro Lys Arg Leu Glu Phe Gly Gly Lys
 370 375 380
 Leu Thr Ile Thr Gln Trp Thr Arg Phe Glu Met Tyr Glu Thr Ala Asp
 385 390 395 400

Phe Gly Trp Gly Lys Pro Val Tyr Ala Gly Pro Ile Asp Leu Arg Pro
405 410 415

Thr Pro Gln Val Cys Val Leu Leu Pro Gln Gly Gly Val Glu Ser Gly
420 425 430

Asn Asp Gln Ser Met Val Val Cys Leu Cys Leu Pro Pro Thr Ala Val
435 440 445

His Thr Phe Thr Arg Leu Leu Ser Leu Asn Asp His Lys
450 455 460

<210> 65

<211> 497

<212> PRT

<213> Arabidopsis thaliana

<400> 65

Ala Trp Gln Ile Glu Gly Ile Gln Val Thr Val Ser Cys Phe Phe Val
1 5 10 15

Thr Cys Gly Lys Thr Arg Ser Ser Ser Asn Asn Pro His His Thr Thr
20 25 30

Phe Phe Ile Leu Ser Glu Asn Asn Asn Gln Met Gly Glu Ala Ala Glu
35 40 45

Gln Ala Arg Gly Phe His Val Thr Thr Thr Arg Lys Gln Val Ile Thr
50 55 60

Ala Ala Leu Pro Leu Gln Asp His Trp Leu Pro Leu Ser Asn Leu Asp
65 70 75 80

Leu Leu Leu Pro Pro Leu Asn Val His Val Cys Phe Cys Tyr Lys Lys
85 90 95

Pro Leu His Phe Thr Asn Thr Val Ala Tyr Glu Thr Leu Lys Thr Ala
100 105 110

Leu Ala Glu Thr Leu Val Ser Tyr Tyr Ala Phe Ala Gly Glu Leu Val
115 120 125

Thr Asn Pro Thr Gly Glu Pro Glu Ile Leu Cys Asn Asn Arg Gly Val
130 135 140

Asp Phe Val Glu Ala Gly Ala Asp Val Glu Leu Arg Glu Leu Asn Leu
145 150 155 160

Tyr Asp Pro Asp Glu Ser Ile Ala Lys Leu Val Pro Ile Lys Lys His
165 170 175

Gly Val Ile Ala Ile Gln Val Thr Gln Leu Lys Cys Gly Ser Ile Val
180 185 190

Val Gly Cys Thr Phe Asp His Arg Val Ala Asp Ala Tyr Ser Met Asn
195 200 205

Met Phe Leu Leu Ser Trp Ala Glu Ile Ser Arg Ser Asp Val Pro Ile
210 215 220

Ser Cys Val Pro Ser Phe Arg Arg Ser Leu Leu Asn Pro Arg Arg Pro
 225 230 235 240
 Leu Val Met Asp Pro Ser Ile Asp Gln Ile Tyr Met Pro Val Thr Ser
 245 250 255
 Leu Pro Pro Pro Gln Glu Thr Thr Asn Pro Glu Asn Leu Leu Ala Ser
 260 265 270
 Arg Ile Tyr Tyr Ile Lys Ala Asn Ala Leu Gln Glu Leu Gln Thr Leu
 275 280 285
 Ala Ser Ser Ser Lys Asn Gly Lys Arg Thr Lys Leu Glu Ser Phe Ser
 290 295 300
 Ala Phe Leu Trp Lys Leu Val Ala Glu His Ala Ala Lys Asp Pro Val
 305 310 315 320
 Pro Ile Lys Thr Ser Lys Leu Gly Ile Val Val Asp Gly Arg Arg Arg
 325 330 335
 Leu Met Glu Lys Glu Asn Asn Thr Tyr Phe Gly Asn Val Leu Ser Val
 340 345 350
 Pro Phe Gly Gly Gln Arg Ile Asp Asp Leu Ile Ser Lys Pro Leu Ser
 355 360 365
 Trp Val Thr Glu Glu Val His Arg Phe Leu Lys Lys Ser Val Thr Lys
 370 375 380
 Glu His Phe Leu Asn Leu Ile Asp Trp Val Glu Thr Cys Arg Pro Thr
 385 390 395 400
 Pro Ala Val Ser Arg Ile Tyr Ser Val Gly Ser Asp Asp Gly Pro Ala
 405 410 415
 Phe Val Val Ser Ser Gly Arg Ser Phe Pro Val Asn Gln Val Asp Phe
 420 425 430
 Gly Trp Gly Ser Pro Val Phe Gly Ser Tyr His Phe Pro Trp Gly Gly
 435 440 445
 Ser Ala Gly Tyr Val Met Pro Met Pro Ser Ser Val Asp Asp Arg Asp
 450 455 460
 Trp Met Val Tyr Leu His Leu Thr Lys Gly Gln Leu Arg Phe Ile Glu
 465 470 475 480
 Glu Glu Ala Ser His Val Leu Lys Pro Ile Asp Asn Asp Tyr Leu Lys
 485 490 495

Ile

<210> 66
 <211> 433
 <212> PRT
 <213> Clarkia breweri

<400> 66

165								170				175			
Leu	Ser	Phe	Lys	Thr	Phe	Leu	Glu	Asn	Leu	Ala	Ser	Leu	Leu	His	Glu
			180					185					190		
Lys	Pro	Leu	Ser	Thr	Pro	Pro	Cys	Asn	Asp	Arg	Thr	Leu	Leu	Lys	Ala
		195					200					205			
Arg	Asp	Pro	Pro	Ser	Val	Ala	Phe	Pro	His	His	Glu	Leu	Val	Lys	Phe
	210					215					220				
Gln	Asp	Cys	Glu	Thr	Thr	Thr	Val	Phe	Glu	Ala	Thr	Ser	Glu	His	Leu
225					230					235					240
Asp	Phe	Lys	Ile	Phe	Lys	Leu	Ser	Ser	Glu	Gln	Ile	Lys	Lys	Leu	Lys
				245					250					255	
Glu	Arg	Ala	Ser	Glu	Thr	Ser	Asn	Gly	Asn	Val	Arg	Val	Thr	Gly	Phe
			260					265					270		
Asn	Val	Val	Thr	Ala	Leu	Val	Trp	Arg	Cys	Lys	Ala	Leu	Ser	Val	Ala
		275					280					285			
Ala	Glu	Glu	Gly	Glu	Glu	Thr	Asn	Leu	Glu	Arg	Glu	Ser	Thr	Ile	Leu
	290					295					300				
Tyr	Ala	Val	Asp	Ile	Arg	Gly	Arg	Leu	Asn	Pro	Glu	Leu	Pro	Pro	Ser
305					310					315					320
Tyr	Thr	Gly	Asn	Ala	Val	Leu	Thr	Ala	Tyr	Ala	Lys	Glu	Lys	Cys	Lys
				325					330					335	
Ala	Leu	Leu	Glu	Glu	Pro	Phe	Gly	Arg	Ile	Val	Glu	Met	Val	Gly	Glu
			340					345					350		
Gly	Ser	Lys	Arg	Ile	Thr	Asp	Glu	Tyr	Ala	Arg	Ser	Ala	Ile	Asp	Trp
		355					360					365			
Gly	Glu	Leu	Tyr	Lys	Gly	Phe	Pro	His	Gly	Glu	Val	Leu	Val	Ser	Ser
	370					375					380				
Trp	Trp	Lys	Leu	Gly	Phe	Ala	Glu	Val	Glu	Tyr	Pro	Trp	Gly	Lys	Pro
385					390					395					400
Lys	Tyr	Ser	Cys	Pro	Val	Val	Tyr	His	Arg	Lys	Asp	Ile	Val	Leu	Leu
				405					410					415	
Phe	Pro	Asp	Ile	Asp	Gly	Asp	Ser	Lys	Gly	Val	Tyr	Val	Leu	Ala	Ala
			420					425					430		
Leu	Pro	Ser	Lys	Glu	Met	Ser	Lys	Phe	Gln	His	Trp	Phe	Glu	Asp	Thr
		435					440					445			
Leu	Cys														
	450														

<210> 68
 <211> 439
 <212> PRT
 <213> Catharanthus roseus

<400> 68

Met	Glu	Ser	Gly	Lys	Ile	Ser	Val	Glu	Thr	Glu	Thr	Leu	Ser	Lys	Thr
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Leu	Ile	Lys	Pro	Ser	Ser	Pro	Thr	Pro	Gln	Ser	Leu	Ser	Arg	Tyr	Asn
			20					25					30		
Leu	Ser	Tyr	Asn	Asp	Gln	Asn	Ile	Tyr	Gln	Thr	Cys	Val	Ser	Val	Gly
		35					40					45			
Phe	Phe	Tyr	Glu	Asn	Pro	Asp	Gly	Ile	Glu	Ile	Ser	Thr	Ile	Arg	Glu
	50					55					60				
Gln	Leu	Gln	Asn	Ser	Leu	Ser	Lys	Thr	Leu	Val	Ser	Tyr	Tyr	Pro	Phe
65					70					75					80
Ala	Gly	Lys	Val	Val	Lys	Asn	Asp	Tyr	Ile	His	Cys	Asn	Asp	Asp	Gly
				85					90					95	
Ile	Glu	Phe	Val	Glu	Val	Arg	Ile	Arg	Cys	Arg	Met	Asn	Asp	Ile	Leu
			100					105					110		
Lys	Tyr	Glu	Leu	Arg	Ser	Tyr	Ala	Arg	Asp	Leu	Val	Leu	Pro	Lys	Arg
		115					120					125			
Val	Thr	Val	Gly	Ser	Glu	Asp	Thr	Thr	Ala	Ile	Val	Gln	Leu	Ser	His
	130					135					140				
Phe	Asp	Cys	Gly	Gly	Leu	Ala	Val	Ala	Phe	Gly	Ile	Ser	His	Lys	Val
145					150					155					160
Ala	Asp	Gly	Gly	Thr	Ile	Ala	Ser	Phe	Met	Lys	Asp	Trp	Ala	Ala	Ser
				165					170					175	
Ala	Cys	Tyr	Leu	Ser	Ser	Ser	His	His	Val	Pro	Thr	Pro	Leu	Leu	Val
			180					185					190		
Ser	Asp	Ser	Ile	Phe	Pro	Arg	Gln	Asp	Asn	Ile	Ile	Cys	Glu	Gln	Phe
		195					200					205			
Pro	Thr	Ser	Lys	Asn	Cys	Val	Glu	Lys	Thr	Phe	Ile	Phe	Pro	Pro	Glu
	210					215					220				
Ala	Ile	Glu	Lys	Leu	Lys	Ser	Lys	Ala	Val	Glu	Phe	Gly	Ile	Glu	Lys
225					230					235					240
Pro	Thr	Arg	Val	Glu	Val	Leu	Thr	Ala	Phe	Leu	Ser	Arg	Cys	Ala	Thr
				245					250					255	
Val	Ala	Gly	Lys	Ser	Ala	Ala	Lys	Asn	Asn	Asn	Cys	Gly	Gln	Ser	Leu
			260					265					270		
Pro	Phe	Pro	Val	Leu	Gln	Ala	Ile	Asn	Leu	Arg	Pro	Ile	Leu	Glu	Leu
		275					280					285			
Pro	Gln	Asn	Ser	Val	Gly	Asn	Leu	Val	Ser	Ile	Tyr	Phe	Ser	Arg	Thr
	290					295					300				
Ile	Lys	Glu	Asn	Asp	Tyr	Leu	Asn	Glu	Lys	Glu	Tyr	Thr	Lys	Leu	Val
305					310					315					320

Ile Asn Glu Leu Arg Lys Glu Lys Gln Lys Ile Lys Asn Leu Ser Arg
 325 330 335
 Glu Lys Leu Thr Tyr Val Ala Gln Met Glu Glu Phe Val Lys Ser Leu
 340 345 350
 Lys Glu Phe Asp Ile Ser Asn Phe Leu Asp Ile Asp Ala Tyr Leu Ser
 355 360 365
 Asp Ser Trp Cys Arg Phe Pro Phe Tyr Asp Val Asp Phe Gly Trp Gly
 370 375 380
 Lys Pro Ile Trp Val Cys Leu Phe Gln Pro Tyr Ile Lys Asn Cys Val
 385 390 395 400
 Val Met Met Asp Tyr Pro Phe Gly Asp Asp Tyr Gly Ile Glu Ala Ile
 405 410 415
 Val Ser Phe Glu Gln Glu Lys Met Ser Ala Phe Glu Lys Asn Glu Gln
 420 425 430
 Leu Leu Gln Phe Val Ser Asn
 435

<210> 69
 <211> 451
 <212> PRT
 <213> Arabidopsis thaliana

<400> 69
 Met Ala Pro Ile Thr Phe Arg Lys Ser Tyr Thr Ile Val Pro Ala Glu
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 Pro Thr Trp Ser Gly Arg Phe Pro Leu Ala Glu Trp Asp Gln Val Gly
 20 25 30
 Thr Ile Thr His Ile Pro Thr Leu Tyr Phe Tyr Asp Lys Pro Ser Glu
 35 40 45
 Ser Phe Gln Gly Asn Val Val Glu Ile Leu Lys Thr Ser Leu Ser Arg
 50 55 60
 Val Leu Val His Phe Tyr Pro Met Ala Gly Arg Leu Arg Trp Leu Pro
 65 70 75 80
 Arg Gly Arg Phe Glu Leu Asn Cys Asn Ala Glu Gly Val Glu Phe Ile
 85 90 95
 Glu Ala Glu Ser Glu Gly Lys Leu Ser Asp Phe Lys Asp Phe Ser Pro
 100 105 110
 Thr Pro Glu Phe Glu Asn Leu Met Pro Gln Val Asn Tyr Lys Asn Pro
 115 120 125
 Ile Glu Thr Ile Pro Leu Phe Leu Ala Gln Val Thr Lys Phe Lys Cys
 130 135 140
 Gly Gly Ile Ser Leu Ser Val Asn Val Ser His Ala Ile Val Asp Gly
 145 150 155 160

Gln Ser Ala Leu His Leu Ile Ser Glu Trp Gly Arg Leu Ala Arg Gly
 165 170 175
 Glu Pro Leu Glu Thr Val Pro Phe Leu Asp Arg Lys Ile Leu Trp Ala
 180 185 190
 Gly Glu Pro Leu Pro Pro Phe Val Ser Pro Pro Lys Phe Asp His Lys
 195 200 205
 Glu Phe Asp Gln Pro Pro Phe Leu Ile Gly Glu Thr Asp Asn Val Glu
 210 215 220
 Glu Arg Lys Lys Lys Thr Ile Val Val Met Leu Pro Leu Ser Thr Ser
 225 230 235 240
 Gln Leu Gln Lys Leu Arg Ser Lys Ala Asn Gly Ser Lys His Ser Asp
 245 250 255
 Pro Ala Lys Gly Phe Thr Arg Tyr Glu Thr Val Thr Gly His Val Trp
 260 265 270
 Arg Cys Ala Cys Lys Ala Arg Gly His Ser Pro Glu Gln Pro Thr Ala
 275 280 285
 Leu Gly Ile Cys Ile Asp Thr Arg Ser Arg Met Glu Pro Pro Leu Pro
 290 295 300
 Arg Gly Tyr Phe Gly Asn Ala Thr Leu Asp Val Val Ala Ala Ser Thr
 305 310 315 320
 Ser Gly Glu Leu Ile Ser Asn Glu Leu Gly Phe Ala Ala Ser Leu Ile
 325 330 335
 Ser Lys Ala Ile Lys Asn Val Thr Asn Glu Tyr Val Met Ile Gly Ile
 340 345 350
 Glu Tyr Leu Lys Asn Gln Lys Asp Leu Lys Lys Phe Gln Asp Leu His
 355 360 365
 Ala Leu Gly Ser Thr Glu Gly Pro Phe Tyr Gly Asn Pro Asn Leu Gly
 370 375 380
 Val Val Ser Trp Leu Thr Leu Pro Met Tyr Gly Leu Asp Phe Gly Trp
 385 390 395 400
 Gly Lys Glu Phe Tyr Thr Gly Pro Gly Thr His Asp Phe Asp Gly Asp
 405 410 415
 Ser Leu Ile Leu Pro Asp Gln Asn Glu Asp Gly Ser Val Ile Leu Ala
 420 425 430
 Thr Cys Leu Gln Val Ala His Met Glu Ala Phe Lys Lys His Phe Tyr
 435 440 445
 Glu Asp Ile
 450

<210> 70
 <211> 461

<212> PRT

<213> Arabidopsis thaliana

<400> 70

Met	Ala	Asn	Gln	Arg	Lys	Pro	Ile	Leu	Pro	Leu	Leu	Leu	Glu	Lys	Lys
1				5					10					15	
Pro	Val	Glu	Leu	Val	Lys	Pro	Ser	Lys	His	Thr	His	Cys	Glu	Thr	Leu
			20					25					30		
Ser	Leu	Ser	Thr	Leu	Asp	Asn	Asp	Pro	Phe	Asn	Glu	Val	Met	Tyr	Ala
		35					40					45			
Thr	Ile	Tyr	Val	Phe	Lys	Ala	Asn	Gly	Lys	Asn	Leu	Asp	Asp	Pro	Val
	50					55					60				
Ser	Leu	Leu	Arg	Lys	Ala	Leu	Ser	Glu	Leu	Leu	Val	His	Tyr	Tyr	Pro
65					70					75					80
Leu	Ser	Gly	Lys	Leu	Met	Arg	Ser	Glu	Ser	Asn	Gly	Lys	Leu	Gln	Leu
				85					90					95	
Val	Tyr	Leu	Gly	Glu	Gly	Val	Pro	Phe	Glu	Val	Ala	Thr	Ser	Thr	Leu
			100					105					110		
Asp	Leu	Ser	Ser	Leu	Asn	Tyr	Ile	Glu	Asn	Leu	Asp	Asp	Gln	Val	Ala
		115					120					125			
Leu	Arg	Leu	Val	Pro	Glu	Ile	Glu	Ile	Asp	Tyr	Glu	Ser	Asn	Val	Cys
	130					135					140				
Tyr	His	Pro	Leu	Ala	Leu	Gln	Val	Thr	Lys	Phe	Ala	Cys	Gly	Gly	Phe
145					150					155					160
Thr	Ile	Gly	Thr	Ala	Leu	Thr	His	Ala	Val	Cys	Asp	Gly	Tyr	Gly	Val
				165					170					175	
Ala	Gln	Ile	Ile	His	Ala	Leu	Thr	Glu	Leu	Ala	Ala	Gly	Lys	Thr	Glu
			180					185					190		
Pro	Ser	Val	Lys	Ser	Val	Trp	Gln	Arg	Glu	Arg	Leu	Val	Gly	Lys	Ile
		195					200					205			
Asp	Asn	Lys	Pro	Gly	Lys	Val	Pro	Gly	Ser	His	Ile	Asp	Gly	Phe	Leu
	210					215					220				
Ala	Thr	Ser	Ala	Tyr	Leu	Pro	Thr	Thr	Asp	Val	Val	Thr	Glu	Thr	Ile
225					230					235					240
Asn	Ile	Arg	Ala	Gly	Asp	Ile	Lys	Arg	Leu	Lys	Asp	Ser	Met	Met	Lys
				245					250					255	
Glu	Cys	Glu	Tyr	Leu	Lys	Glu	Ser	Phe	Thr	Thr	Tyr	Glu	Val	Leu	Ser
			260					265					270		
Ser	Tyr	Ile	Trp	Lys	Leu	Arg	Ser	Arg	Ala	Leu	Lys	Leu	Asn	Pro	Asp
		275					280					285			
Gly	Ile	Thr	Val	Leu	Gly	Val	Ala	Val	Gly	Ile	Arg	His	Val	Leu	Asp
	290					295					300				

Pro Pro Leu Pro Lys Gly Tyr Tyr Gly Asn Ala Tyr Ile Asp Val Tyr
 305 310 315 320
 Val Glu Leu Thr Val Arg Glu Leu Glu Glu Ser Ser Ile Ser Asn Ile
 325 330 335
 Ala Asn Arg Val Lys Lys Ala Lys Lys Thr Ala Tyr Glu Lys Gly Tyr
 340 345 350
 Ile Glu Glu Glu Leu Lys Asn Thr Glu Arg Leu Met Arg Asp Asp Ser
 355 360 365
 Met Phe Glu Gly Val Ser Asp Gly Leu Phe Phe Leu Thr Asp Trp Arg
 370 375 380
 Asn Ile Gly Trp Phe Gly Ser Met Asp Phe Gly Trp Asn Glu Pro Val
 385 390 395 400
 Asn Leu Arg Pro Leu Thr Gln Arg Glu Ser Thr Val His Val Gly Met
 405 410 415
 Ile Leu Lys Pro Ser Lys Ser Asp Pro Ser Met Glu Gly Gly Val Lys
 420 425 430
 Val Ile Met Lys Leu Pro Arg Asp Ala Met Val Glu Phe Lys Arg Glu
 435 440 445
 Met Ala Thr Met Lys Lys Leu Tyr Phe Gly Asp Thr Asn
 450 455 460

<210> 71
 <211> 460
 <212> PRT
 <213> Nicotiana tabacum

<400> 71
 Met Asp Ser Lys Gln Ser Ser Glu Leu Val Phe Thr Val Arg Arg Gln
 1 5 10 15
 Lys Pro Glu Leu Ile Ala Pro Ala Lys Pro Thr Pro Arg Glu Thr Lys
 20 25 30
 Phe Leu Ser Asp Ile Asp Asp Gln Glu Gly Leu Arg Phe Gln Ile Pro
 35 40 45
 Val Ile Gln Phe Tyr His Lys Asp Ser Ser Met Gly Arg Lys Asp Pro
 50 55 60
 Val Lys Val Ile Lys Lys Ala Ile Ala Glu Thr Leu Val Phe Tyr Tyr
 65 70 75 80
 Pro Phe Ala Gly Arg Leu Arg Glu Gly Asn Gly Arg Lys Leu Met Val
 85 90 95
 Asp Cys Thr Gly Glu Gly Ile Met Phe Val Glu Ala Asp Ala Asp Val
 100 105 110
 Thr Leu Glu Gln Phe Gly Asp Glu Leu Gln Pro Pro Phe Pro Cys Leu
 115 120 125

Glu Glu Leu Leu Tyr Asp Val Pro Asp Ser Ala Gly Val Leu Asn Cys
 130 135 140
 Pro Leu Leu Leu Ile Gln Val Thr Arg Leu Arg Cys Gly Gly Phe Ile
 145 150 155 160
 Phe Ala Leu Arg Leu Asn His Thr Met Ser Asp Ala Pro Gly Leu Val
 165 170 175
 Gln Phe Met Thr Ala Val Gly Glu Met Ala Arg Gly Gly Ser Ala Pro
 180 185 190
 Ser Ile Leu Pro Val Trp Cys Arg Glu Leu Leu Asn Ala Arg Asn Pro
 195 200 205
 Pro Gln Val Thr Cys Thr His His Glu Tyr Asp Glu Val Arg Asp Thr
 210 215 220
 Lys Gly Thr Ile Ile Pro Leu Asp Asp Met Val His Lys Ser Phe Phe
 225 230 235 240
 Phe Gly Pro Ser Glu Val Ser Ala Leu Arg Arg Phe Val Pro His His
 245 250 255
 Leu Arg Lys Cys Ser Thr Phe Glu Leu Leu Thr Ala Val Leu Trp Arg
 260 265 270
 Cys Arg Thr Met Ser Leu Lys Pro Asp Pro Glu Glu Glu Val Arg Ala
 275 280 285
 Leu Cys Ile Val Asn Ala Arg Ser Arg Phe Asn Pro Pro Leu Pro Thr
 290 295 300
 Gly Tyr Tyr Gly Asn Ala Phe Ala Phe Pro Val Ala Val Thr Thr Ala
 305 310 315 320
 Ala Lys Leu Ser Lys Asn Pro Leu Gly Tyr Ala Leu Glu Leu Val Lys
 325 330 335
 Lys Thr Lys Ser Asp Val Thr Glu Glu Tyr Met Lys Ser Val Ala Asp
 340 345 350
 Leu Met Val Leu Lys Gly Arg Pro His Phe Thr Val Val Arg Thr Phe
 355 360 365
 Leu Val Ser Asp Val Thr Arg Gly Gly Phe Gly Glu Val Asp Phe Gly
 370 375 380
 Trp Gly Lys Ala Val Tyr Gly Gly Pro Ala Lys Gly Gly Val Gly Ala
 385 390 395 400
 Ile Pro Gly Val Ala Ser Phe Tyr Ile Pro Phe Lys Asn Lys Lys Gly
 405 410 415
 Glu Asn Gly Ile Val Val Pro Ile Cys Leu Pro Gly Phe Ala Met Glu
 420 425 430
 Thr Phe Val Lys Glu Leu Asp Gly Met Leu Lys Val Asp Ala Pro Leu
 435 440 445
 Val Asn Ser Asn Tyr Ala Ile Ile Arg Pro Ala Leu

450

455

460

<210> 72

<211> 455

<212> PRT

<213> Cucumis melo

<400> 72

Asp Phe Ser Phe His Val Arg Lys Cys Gln Pro Glu Leu Ile Ala Pro
 1 5 10 15

Ala Asn Pro Thr Pro Tyr Glu Phe Lys Gln Leu Ser Asp Val Asp Asp
 20 25 30

Gln Gln Ser Leu Arg Leu Gln Leu Pro Phe Val Asn Ile Tyr Pro His
 35 40 45

Asn Pro Ser Leu Glu Gly Arg Asp Pro Val Lys Val Ile Lys Glu Ala
 50 55 60

Ile Gly Lys Ala Leu Val Phe Tyr Tyr Pro Leu Ala Gly Arg Leu Arg
 65 70 75 80

Glu Gly Pro Gly Arg Lys Leu Phe Val Glu Cys Thr Gly Glu Gly Ile
 85 90 95

Leu Phe Ile Glu Ala Asp Ala Asp Val Ser Leu Glu Glu Phe Trp Asp
 100 105 110

Thr Leu Pro Tyr Ser Leu Ser Ser Met Gln Asn Asn Ile Ile His Asn
 115 120 125

Ala Leu Asn Ser Asp Glu Val Leu Asn Ser Pro Leu Leu Leu Ile Gln
 130 135 140

Val Thr Arg Leu Lys Cys Gly Gly Phe Ile Phe Gly Leu Cys Phe Asn
 145 150 155 160

His Thr Met Ala Asp Gly Phe Gly Ile Val Gln Phe Met Lys Ala Thr
 165 170 175

Ala Glu Ile Ala Arg Gly Ala Phe Ala Pro Ser Ile Leu Pro Val Trp
 180 185 190

Gln Arg Ala Leu Leu Thr Ala Arg Asp Pro Pro Arg Ile Thr Phe Arg
 195 200 205

His Tyr Glu Tyr Asp Gln Val Val Asp Met Lys Ser Gly Leu Ile Pro
 210 215 220

Val Asn Ser Lys Ile Asp Gln Leu Phe Phe Phe Ser Gln Leu Gln Ile
 225 230 235 240

Ser Thr Leu Arg Gln Thr Leu Pro Ala His Leu His Asp Cys Pro Ser
 245 250 255

Phe Glu Val Leu Thr Ala Tyr Val Trp Arg Leu Arg Thr Ile Ala Leu
 260 265 270

Gln Phe Lys Pro Glu Glu Glu Val Arg Phe Leu Cys Val Met Asn Leu

275 280 285
 Arg Ser Lys Ile Asp Ile Pro Leu Gly Tyr Tyr Gly Asn Ala Val Val
 290 295 300
 Val Pro Ala Val Ile Thr Thr Ala Ala Lys Leu Cys Gly Asn Pro Leu
 305 310 315 320
 Gly Tyr Ala Val Asp Leu Ile Arg Lys Ala Lys Ala Lys Ala Thr Met
 325 330 335
 Glu Tyr Ile Lys Ser Thr Val Asp Leu Met Val Ile Lys Gly Arg Pro
 340 345 350
 Tyr Phe Thr Val Val Gly Ser Phe Met Met Ser Asp Leu Thr Arg Ile
 355 360 365
 Gly Val Glu Asn Val Asp Phe Gly Trp Gly Lys Ala Ile Phe Gly Gly
 370 375 380
 Pro Thr Thr Thr Gly Ala Arg Ile Thr Arg Gly Leu Val Ser Phe Cys
 385 390 395 400
 Val Pro Phe Met Asn Arg Asn Gly Glu Lys Gly Thr Ala Leu Ser Leu
 405 410 415
 Cys Leu Pro Pro Pro Ala Met Glu Arg Phe Arg Ala Asn Val His Ala
 420 425 430
 Ser Leu Gln Val Lys Gln Val Val Asp Ala Val Asp Ser His Met Gln
 435 440 445
 Thr Ile Gln Ser Ala Ser Lys
 450 455

<210> 73
 <211> 445
 <212> PRT
 <213> Arabidopsis thaliana

<400> 73
 Met Ser Ile Gln Ile Lys Gln Ser Thr Met Val Arg Pro Ala Glu Glu
 1 5 10 15
 Thr Pro Asn Lys Ser Leu Trp Leu Ser Asn Ile Asp Met Ile Leu Arg
 20 25 30
 Thr Pro Tyr Ser His Thr Gly Ala Val Leu Ile Tyr Lys Gln Pro Asp
 35 40 45
 Asn Asn Glu Asp Asn Ile His Pro Ser Ser Ser Met Tyr Phe Asp Ala
 50 55 60
 Asn Ile Leu Ile Glu Ala Leu Ser Lys Ala Leu Val Pro Phe Tyr Pro
 65 70 75 80
 Met Ala Gly Arg Leu Lys Ile Asn Gly Asp Arg Tyr Glu Ile Asp Cys
 85 90 95
 Asn Ala Glu Gly Ala Leu Phe Val Glu Ala Glu Ser Ser His Val Leu

100					105					110					
Glu	Asp	Phe	Gly	Asp	Phe	Arg	Pro	Asn	Asp	Glu	Leu	His	Arg	Val	Met
		115					120						125		
Val	Pro	Thr	Cys	Asp	Tyr	Ser	Lys	Gly	Ile	Ser	Ser	Phe	Pro	Leu	Leu
	130					135					140				
Met	Val	Gln	Leu	Thr	Arg	Phe	Arg	Cys	Gly	Gly	Val	Ser	Ile	Gly	Phe
145					150					155					160
Ala	Gln	His	His	His	Val	Cys	Asp	Gly	Met	Ala	His	Phe	Glu	Phe	Asn
				165					170					175	
Asn	Ser	Trp	Ala	Arg	Ile	Ala	Lys	Gly	Leu	Leu	Pro	Ala	Leu	Glu	Pro
			180					185					190		
Val	His	Asp	Arg	Tyr	Leu	His	Leu	Arg	Pro	Arg	Asn	Pro	Pro	Gln	Ile
		195					200					205			
Lys	Tyr	Ser	His	Ser	Gln	Phe	Glu	Pro	Phe	Val	Pro	Ser	Leu	Pro	Asn
	210					215					220				
Glu	Leu	Leu	Asp	Gly	Lys	Thr	Asn	Lys	Ser	Gln	Thr	Leu	Phe	Ile	Leu
225					230					235					240
Ser	Arg	Glu	Gln	Ile	Asn	Thr	Leu	Lys	Gln	Lys	Leu	Asp	Leu	Ser	Asn
			245						250					255	
Asn	Thr	Thr	Arg	Leu	Ser	Thr	Tyr	Glu	Val	Val	Ala	Ala	His	Val	Trp
			260					265					270		
Arg	Ser	Val	Ser	Lys	Ala	Arg	Gly	Leu	Ser	Asp	His	Glu	Glu	Ile	Lys
		275					280					285			
Leu	Ile	Met	Pro	Val	Asp	Gly	Arg	Ser	Arg	Ile	Asn	Asn	Pro	Ser	Leu
	290					295					300				
Pro	Lys	Gly	Tyr	Cys	Gly	Asn	Val	Val	Phe	Leu	Ala	Val	Cys	Thr	Ala
305					310					315					320
Thr	Val	Gly	Asp	Leu	Ser	Cys	Asn	Pro	Leu	Thr	Asp	Thr	Ala	Gly	Lys
				325					330					335	
Val	Gln	Glu	Ala	Leu	Lys	Gly	Leu	Asp	Asp	Asp	Tyr	Leu	Arg	Ser	Ala
			340					345					350		
Ile	Asp	His	Thr	Glu	Ser	Lys	Pro	Gly	Leu	Pro	Val	Pro	Tyr	Met	Gly
		355					360					365			
Ser	Pro	Glu	Lys	Thr	Leu	Tyr	Pro	Asn	Val	Leu	Val	Asn	Ser	Trp	Gly
	370					375					380				
Arg	Ile	Pro	Tyr	Gln	Ala	Met	Asp	Phe	Gly	Trp	Gly	Ser	Pro	Thr	Phe
385					390					395					400
Phe	Gly	Ile	Ser	Asn	Ile	Phe	Tyr	Asp	Gly	Gln	Cys	Phe	Leu	Ile	Pro
				405					410					415	
Ser	Arg	Asp	Gly	Asp	Gly	Ser	Met	Thr	Leu	Ala	Ile	Asn	Leu	Phe	Ser
			420					425					430		

Ser His Leu Ser Arg Phe Lys Lys Tyr Phe Tyr Asp Phe
 435 440 445

<210> 74
 <211> 446
 <212> PRT
 <213> Arabidopsis thaliana

<400> 74
 Met Glu Thr Met Thr Met Lys Val Glu Thr Ile Ser Lys Glu Ile Ile
 1 5 10 15
 Lys Pro Ser Ser Pro Thr Pro Asn Asn Leu Gln Thr Leu Gln Leu Ser
 20 25 30
 Ile Tyr Asp His Ile Leu Pro Pro Val Tyr Thr Val Ala Phe Leu Phe
 35 40 45
 Tyr Thr Lys Asn Asp Leu Ile Ser Gln Glu His Thr Ser His Lys Leu
 50 55 60
 Lys Thr Ser Leu Ser Glu Thr Leu Thr Lys Phe Tyr Pro Leu Ala Gly
 65 70 75 80
 Arg Ile Thr Gly Val Thr Val Asp Cys Thr Asp Glu Gly Ala Ile Phe
 85 90 95
 Val Asp Ala Arg Val Asn Asn Cys Pro Leu Thr Glu Phe Leu Lys Cys
 100 105 110
 Pro Asp Phe Asp Ala Leu Gln Gln Leu Leu Pro Leu Asp Val Val Asp
 115 120 125
 Asn Pro Tyr Val Ala Ala Ala Thr Trp Pro Leu Leu Leu Val Lys Ala
 130 135 140
 Thr Tyr Phe Gly Cys Gly Gly Met Ala Ile Gly Ile Cys Ile Thr His
 145 150 155 160
 Lys Ile Ala Asp Ala Ala Ser Ile Ser Thr Phe Ile Arg Ser Trp Ala
 165 170 175
 Ala Thr Ala Arg Gly Glu Asn Asp Ala Ala Ala Met Glu Ser Pro Val
 180 185 190
 Phe Ala Gly Ala Asn Phe Tyr Pro Pro Ala Asn Glu Ala Phe Lys Leu
 195 200 205
 Pro Ala Asp Glu Gln Ala Gly Lys Arg Ser Ser Ile Thr Lys Arg Phe
 210 215 220
 Val Phe Glu Ala Ser Lys Val Glu Asp Leu Arg Thr Lys Ala Ala Ser
 225 230 235 240
 Glu Glu Thr Val Asp Gln Pro Thr Arg Val Glu Ser Val Thr Ala Leu
 245 250 255
 Ile Trp Lys Cys Phe Val Ala Ser Ser Lys Thr Thr Thr Cys Asp His
 260 265 270

Lys Val Leu Val Gln Leu Ala Asn Leu Arg Ser Lys Ile Pro Ser Leu
 275 280 285
 Leu Gln Glu Ser Ser Ile Gly Asn Leu Met Phe Ser Ser Val Val Leu
 290 295 300
 Ser Ile Gly Arg Gly Gly Glu Val Lys Ile Glu Glu Ala Val Arg Asp
 305 310 315 320
 Leu Arg Lys Lys Lys Glu Glu Leu Gly Thr Val Ile Leu Asp Glu Gly
 325 330 335
 Gly Ser Ser Asp Ser Ser Ser Met Ile Gly Ser Lys Leu Ala Asn Leu
 340 345 350
 Met Leu Thr Asn Tyr Ser Arg Leu Ser Tyr Glu Thr His Glu Pro Tyr
 355 360 365
 Thr Val Ser Ser Trp Cys Lys Leu Pro Leu Tyr Glu Ala Ser Phe Gly
 370 375 380
 Trp Asp Ser Pro Val Trp Val Val Gly Asn Val Ser Pro Val Leu Gly
 385 390 395 400
 Asn Leu Ala Met Leu Ile Asp Ser Lys Asp Gly Gln Gly Ile Glu Ala
 405 410 415
 Phe Val Thr Leu Pro Glu Glu Asn Met Ser Ser Phe Glu Gln Asn Pro
 420 425 430
 Glu Leu Leu Ala Phe Ala Thr Met Asn Pro Ser Val Leu Val
 435 440 445

end A₁
